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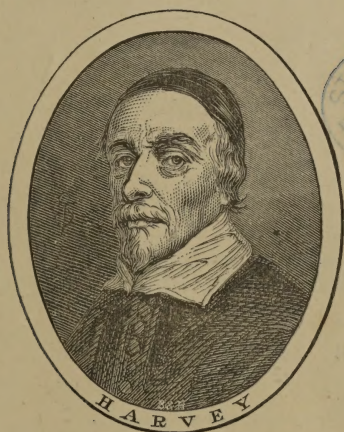
OF

GREAT BRITAIN AND IRELAND

INCLUDING

Midwifery and the Diseases of Women and Children

EDITED BY A. L. GALABIN, M.A., M.D.



VOL. V

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# LIST OF ORIGINAL COMMUNICATIONS.

	PAGE
Influence of Posture on Women. By J. H. Aveling, M.D. . . . .	1, 633
On Incision of the Cervix Uteri. By Heywood Smith, M.A., M.D. . . . .	31
On the Treatment of Ruptures of the Perineum. By Thomas Chambers, F.R.C.P., F.R.C.S. Edin. . . . .	34
On the Bearings of Chronic Disease of the Heart upon Pregnancy and Parturition. By Angus Macdonald, M.D., F.R.C.P.E., F.R.C.S.E. 73, 145, 217, 289, 353, 417, 489	489
On the Treatment of Perineal Rupture (Reply to Dr. Chambers). By G. G. Bantock, M.D., F.R.C.S. Edin. . . . .	94
Peri-uterine Hæmatocele and Pelvic Cellulitis Contrasted. By Dr. Graily Hewitt. Narrative by S. H. Burton, M.B., B.Sc. Lond. . . . .	99
Notes on a Case of Retained Menstrual Discharge. By A. E. Aust Lawrence, M.D. . . . .	108
On Kolpoplekisis and other Allied Procedures, as a Means of Treating Vesico-Vaginal Fistulæ. By N. Bozeman, M.D. . . . .	170, 233, 309
Puerperal Eclampsia (with Notes of a Case). By Thomas Oliver, M.B. . . . .	242
Dr. Roper's New Craniotomy Forceps . . . . .	249
On the Treatment of Chronic Inflammation and Simple Ulceration of the Os and Cervix Uteri. By Percy Boulton, M.D. . . . .	319
On Morphia as a Parturifacient. By Arthur Wiglesworth, L.R.C.P. . . . .	368
The Treatment of Post-partum Hæmorrhage. By H. Otis Hyatt, M.D. . . . .	383
Correlation of the Psychological and Physiological Forces. By E. H. Trenholme, M.D. . . . .	439
On a Form of Infantile Pyrexia associated with Disordered Bowels. By J. Aikman, M.D. . . . .	447
On the Mechanism of Labour. By W. Stephenson, M.D., F.R.C.S.E. 518, 588, 649, 777	777
On the Use of Chloroform in "Stammering of the Uterus" during Labour. By David P. James, M.R.C.S.E. . . . .	524
The Effects of Frequent and Early Use of Midwifery Forceps upon the Fœtal and Maternal Mortality. By A. L. Galabin, M.A., M.D. . . . .	561
Additional Cases illustrating the Changes which occur Periodically in the Mucous Membrane of the Uterus. By John Williams, M.D. . . . .	593
On the Management of the Nipples. By Samuel Sloan, M.D. . . . .	653
A Case of Puerperal Eclampsia. By Arthur Wiglesworth, L.R.C.P. . . . .	669
Note on Two Contrasted Forms of Weak Labour. By J. Matthews Duncan, M.D. . . . .	705
Infantile Paralysis, the Clinical History of Cases with Rigid, and those with Flaccid Muscles. By William Adams, F.R.C.S. . . . .	710
Difficulty in Diagnosis due to Rotation of Ovarian Tumours. By J. Knowsley Thornton, M.B. . . . .	720
The Pulse-Rate considered in Relation to Post-partum Hæmorrhage. By J. Ashburton Thompson, M.D. . . . .	785
Résumé of the Treatment of Fibroids of the Uterus, particularly in their Early Stages. By G. de Gorrequer Griffith, L.R.C.P. . . . .	800

# ABSTRACTS OF SOCIETIES' PROCEEDINGS.

	PAGE		PAGE
Specimens of Placentæ, with abnormal arrangement of the bloodvessels . . . . .	41	Cases of Puerperal Pleuro-pneumonia . . . . .	387
The Forceps in Modern Midwifery . . . . .	42	Notes on a Case of Hemiplegia in a Child following the application of the Forceps at Birth . . . . .	401
Five Cases of Complete Inversion of the Uterus, with Remarks on the Operation for Chronic Inversion . . . . .	48	Cases of Disease of the Uterus in connexion with the Use of Alcoholic Stimulants . . . . .	403
Specimen of Supernumerary Mammæ . . . . .	114	Note on the Use of the Stethoscope in Obstetrics . . . . .	473
Dr. Bozeman's Instruments for the Treatment of Vesico-vaginal Fistulæ and Atresia Vaginæ when complicating that condition . . . . .	114	Note of a Case of Extra-uterine Pregnancy . . . . .	476, 678
Report on Dr. Palfrey's specimen of a Two-headed Monster . . . . .	115	Case of Patent Foramen Ovale occurring in Live Birth . . . . .	476
On Fibroid Tumours complicating Delivery . . . . .	116	Notes of a Case of an Anencephalous Fœtus born Co-twin with a Healthy Child . . . . .	476
Specimen of a "Siren Fœtus" . . . . .	120	Notes of a Case of Labour complicated with Emphysema . . . . .	477
Specimen of a "Celosome Fœtus" . . . . .	120	Case of Spontaneous Version after the rupture of the Membranes in a Primipara . . . . .	478
On some of the Relations of the Fœtal Head to Rupture of the Perineum and Injuries of the External Genital Organs . . . . .	120	A Synopsis of 1500 Consecutive Labours . . . . .	540
Specimen of a very large Myxomatous Tumour . . . . .	128	The Forceps in certain Breech Presentations . . . . .	544
Notes on Diphtheria . . . . .	128, 407	Specimen of a Hand-spray for injecting perchloride of iron into the Uterus . . . . .	546
Epithelioma of Cervix Uteri—Operation . . . . .	136	Specimen of Phosphatic Calculus from the Female Bladder . . . . .	546
Apparatus for Exhibiting Uterine Injections after Delivery . . . . .	191	Specimen of Oxalate of Lime Calculus from Female Bladder . . . . .	546
A Pessary for Complete Procidentia Uteri . . . . .	191	On Transfusion in Post-partum Hæmorrhage . . . . .	546
Ascites combined with Distension of the Bladder in a Fœtus . . . . .	192	Dr. Tarnier's New Forceps . . . . .	603, 817
On a New Mode of Treating Certain Cases of Retroflexion of the Unimpregnated Uterus . . . . .	192	Dr. Galabin's New Forceps . . . . .	605
Syphilitic and other Tumours of the Labia and Clitoris . . . . .	199	Drs. Budin and Pinard's Obstetric Phantom . . . . .	606
An Instrument for Application of Perchloride of Iron to the Cavity of the Uterus . . . . .	250	On a Diagnostic Sign of Vaginal Hæmorrhage during Parturition . . . . .	607
A Flexible Galvanic Intra-uterine Stem Pessary . . . . .	250	On the Choice of the Leg which should be Seized in Version for Presentation of the Upper Extremity . . . . .	608
A New Form of Craniotomy Forceps . . . . .	250	Amputation of the Uterus in a Case of Chronic Inversion caused by a Fibrous Tumour . . . . .	611
Specimens of Ferguson's Speculum of Toughened Glass . . . . .	250	Cases of Polypus Uteri . . . . .	618
The Pathology and Treatment of Membranous Dysmenorrhœa . . . . .	251	On the Treatment of Puerperal Convulsions . . . . .	620
A difficult Case of Labour in a Primiparous Woman, who having been Barren for thirteen years, became Pregnant after division of a deformed Cervix Uteri . . . . .	256	Case of Secondary Puerperal Hæmorrhage . . . . .	674
Specimens illustrating friability of the Umbilical Cord, and the so-called torsion of the Cord . . . . .	257	Case of General Dropsy in the Fœtus with Hypertrophy of the Placenta . . . . .	675
A specimen of a peculiar Hydrorachis in a Fœtus . . . . .	258	Case of Complete Rupture of the Perineum . . . . .	676
Specimen of a remarkable Encephaloid Fœtus . . . . .	258	Case of Meningocele complicating Labour . . . . .	678
On the Therapeutic Action of the Secale Cornutum . . . . .	259	Case of Double Vagina and Uterus . . . . .	678
Case of Triplets complicated with Puerperal Convulsions after Delivery . . . . .	263	Cases of Removal of Large Uterine Myomata by Abdominal Section . . . . .	679
A peculiar form of Vaginal Hernia . . . . .	265	Description of an Acardiac Fœtus . . . . .	681
Note of a Case of Painless Second Stage of Labour in a Primipara . . . . .	265	Cases of Partial Placenta Prævia . . . . .	686
On the Condition of the Cervix Uteri in the Latter Months of Utero-Gestation; with a specimen . . . . .	268	Cases of Procidentia Uteri . . . . .	687
Specimen of a Uterus in the cavity of which suppuration had occurred from Occlusion of the Cervix from Cancer commencing near the Internal Os . . . . .	324	Remarks on Fibrous Tumours of the Uterus . . . . .	691
Specimen of the Viscera from a Case in which Cæsarian Section was performed . . . . .	325	Specimen of a Ruptured Uterus . . . . .	733
Specimen of Elephantiasis of the Vulva . . . . .	326	Specimen of a Uterus into which perchloride of iron had been injected . . . . .	733
Additional Cases of Ovariectomy performed during Pregnancy . . . . .	326	President's Annual Address to London Obstetrical Society . . . . .	736
Notes of a Case of Extra-uterine Fœtation . . . . .	333	A preparation illustrative of Diseased Kidneys of the Fœtus . . . . .	746
Erysipelatous Metritis . . . . .	343	Case of Vicarious Menstruation . . . . .	747
Specimen of a "Fœtus Papyraceus" . . . . .	387	The Systematic Prevention of "After Pains" . . . . .	747
Specimen of a Fœtus with Intra-uterine Peritonitis, and dilatation of bladder, uterus, and kidneys . . . . .	387	On the Resuscitation of Still-born Children . . . . .	749
		Case of Labour Impeded by Enlargement of the Fœtal Kidneys . . . . .	753
		Case of Labour complicated by Prolapse of the Leg . . . . .	755
		On the Nature and Mechanism of Spontaneous Rupture of the Uterus in its Cervical Portion . . . . .	756
		Specimens of General Cancer of the body of the Uterus, not affecting the Cervix . . . . .	810
		Specimen of Eversion of the Intestine through the Umbilicus of an Infant . . . . .	814
		Report of the University Lying-in Hospital, Montreal . . . . .	814
		Report of the Rotunda Hospital for Year ending 5th November, 1876 . . . . .	818



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INFLUENCE OF POSTURE ON WOMEN.

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Physician to the Chelsea Hospital for Women ; Vice-President of the Obstetrical Society of London ; Honorary Member of the Obstetrical Society of Dublin, &c.

(Continued from p. 795, vol. iv.)

CHAPTER IV.—(continued.)

(d.) *Obstructed Parturition.*

(a.) *From Anomalies of the Soft Parts.*—There are many instances in which it would be highly injudicious for a patient to remain in the upright posture during labour, for in this position gravitation causes obstacles which would not otherwise present themselves. When erect, all movable pelvic tumours fall, and if they prolapse before the fetal head, its progress will be retarded or altogether checked. Pelvic tumours and vesical calculi, if known to exist, should, if possible, at the approach of parturition be raised above the pelvic brim, and maintained there by posture and other suitable means until the head of the fetus is engaged in the pelvic cavity.

The hips should be elevated above the level of the shoulders, and the patient should lie in the semi-prone posture. This advice also applies to cases of cystocele, rectocele, and edema and hematoma of the vagina and vulva.

A cause of obstructed labour little recognised, but of frequent occurrence, is a dense condition of the perineum, which, as is the habit of skin exposed to friction, becomes tough and rigid from being constantly in contact with and in motion upon a sitting surface. It is met with in those whose occupations necessitate their spending the greater part of their lives seated at an employment which keeps the body perpetually in action. The pressure and friction of the seat against the perineum renders it dense and unyielding, and this result is rather augmented by soft seats, for they increase the area of the bearing surface, which naturally should be upon the skin immediately beneath the tuberosities of the ischia.

(β.) *From Anomalies of the Pelvis.*—The varieties of pelvic deformities produced by posture which obstruct parturition are so great that it will only be possible here to consider them in a general way. They are, however, worthy of careful attention, for it is calculated that one-sixth of the cases of obstructed labour have their origin in pelvic distortions. And when it is remembered that the greater proportion of these is due to posture maintained before the full development, or during a diseased condition of the pelvic bones, it must be evident that the subject, wide as it is, forms an important part of the question under consideration.

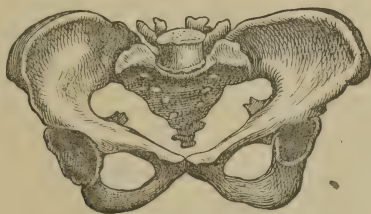
(1.) *Distortion during Development.*—The pelvis may be looked upon early in life as a firm but elastic ring composed of bone cartilage and ligaments. This ring, when the body is erect or sitting, has its circumference acted upon in various ways. In both positions it is pressed upon from above by the weight of the head, arms, and trunk, which is communicated through the spine to the sacrum. When upright the ring is pressed upon from below by the heads of the femora in the cotyloid cavities, and when sitting by the surface sat upon, acting upon the tuberosities of the ischia. There are, therefore, five principal points of pressure—four from below and one from above; and from the points below four arches spring—the ischio-sacral arch and the ischio-pubic counter arch, the cotylo-sacral arch and the cotylo-pubic counter arch. The influence of standing or sitting upon these arches is to



spread them out and flatten their arcs. Bearing these elementary postulates in mind, the rationale of the causation of flat pelvises may be readily understood.

If young girls be made to stand or sit for long periods during the soft and undeveloped condition of their pelvic bones, the flattening pressure is effectively brought into play. In standing the sacrum is forced down into the pelvic inlet, and flatness results from spreading of the cotylo-sacral arch and consequent tension upon the cotylo-pubic counter arch. In sitting the same takes place, except that the strain is now borne by the ischio-sacral and ischio-pubic arches. In either case the result is to elongate the transverse diameter of the inlet, and to narrow it antero-posteriorly. The outlet of the pelvis does not suffer in such a way as to cause obstruction during parturition.

FIG. 5.



Flat pelvis.

This form of pelvic distortion is by far the most common, and is without doubt often due to the ignorant or imprudent conduct of those who have the charge of girls. Young children should not be made to stand and sit in a constrained position for many hours during the day. Nature has made them vivacious and restless, and constant change of position is necessary for their health and normal development. The floor is the best place for them. On a soft carpet with a few cushions they will thoroughly enjoy themselves, and in a short time pose themselves in hundreds of attitudes. When tired of running or standing they will sit, and when tired of sitting they will recline or lie down. The prolonged maintenance of one posture is injurious to adults, but it is far more disastrous in its consequences upon children.

Special pelvic deformities are caused by certain employments, amusements, and habits. Besides the flat pelvis in which the obstructing deformity is produced at the inlet, there is a distortion of the pelvis caused by posture in which the outlet is affected. In this case the apex of the sacrum is directed forward, and the tuberosities of the ischia are approximated, the pelvic cavity becoming funnel-shaped. Sitting, under these circumstances, must have the effect of increasing the deformity. It is caused sometimes by young girls sitting upon seats badly constructed—that is, with rigid rims and yielding centres. Thus made the seat forms a cup-shaped cavity, against the sides of which the yielding bones of the pelvis are pressed laterally. This deformity is also caused and increased by the action of the great glutei muscles when girls are made to walk or stand too long.

Obliquity of the pelvis may be produced by bad positional habits, such as standing upon one leg, sitting upon the side of a chair upon only one of the tuberosities of the ischia, crossing the legs, leaning to one side during writing, embroidery, and other amusements or employments. The most common of the causes of obliquity is standing on one leg. Girls who are made to remain erect for a long time become fatigued, and “stand at ease”—that is, with the whole weight of the body thrown upon one leg. The right is usually selected. In this way one side of the pelvis becomes raised above the other, and one iliac bone may be observed when the oblique distortion is produced situated higher than the other. This deformity may also result from abnormal conditions of the spine or legs, and in these cases the pelvis is affected by posture secondarily. One leg too short, or lateral obliquity of the lumbar vertebra, will cause pelvic obliquity.

(2.) *Distortion during Rickets.*—When the bones of children become softened by disease, all the foregoing remarks apply with very much greater force. A child afflicted with rickets requires unceasing care and attention. If a female, the lives of herself and her offspring will depend in after life upon the success of the treatment adopted to prevent pelvic deformity. Distortions following a softened con-

dition of the bones are very various. The most common form is an exaggerated flattening of the pelvis. Many modifications of this deformity occur which depend upon the postures the little patients have been most persistently allowed or made to assume. If they be permitted to walk or stand, besides a greater flattening than is observed in the non-rickety pelvis, a more serious distortion takes place. The sides of the pelvis yielding to the continued pressure of the heads of the femora fall inwards until the inlet is nearly occluded.

FIG. 6.



Rickety pelvis.

A child suffering from rickets should on no account ever be allowed to sit for any length of time. This posture produces divergence of the ischial tuberosities, and thus enables the surface sat upon to press up the apex of the sacrum, bending and sometimes causing ankylosis of the coccyx at right angles to the axis of the outlet.

The recumbent and reclining postures are the best for rickety girls, but no special posture should be prescribed or tolerated. If the supine position be exclusively maintained, the yielding pelvis will become flattened transversely, and if the bones be very soft the sacrum will be pressed upwards whilst the symphysis pubis will sink, and the inlet be made to assume the shape of a figure  $\infty$ . If the little patient be kept lying on one side, the trochanter of that side will press upwards the cotyloid cavity at the cartilaginous junction of the bones, and force the side of the pelvis inwards, the pelvic arch on the other side becoming flattened.

All the remarks which have here been made upon the influence of posture in producing pelvic deformities apply



with equal, if not greater, force to softening of the adult pelvis by osteomalacia. The disorder usually affects women who have had children. At this age the weight of the body borne by the pelvis when the patient is sitting or standing is a very great and distorting power, and promptly doubles up the pelvic bones so as to cause serious obstruction to parturition.

(3.) *Obstructive Influence of Pelvic Deformities.*—Distortions of the pelvis influence the progress of parturition very variously ; they may produce either a slight impediment or an insuperable barrier. They may also, without presenting mechanical obstacles connected with the mother, impede labour by causing malposition of the child, which is said to take place in parturition four times more frequently than when the pelvis is normal in shape. This is easily explained ; for when the fetal head and uterine cervix are able to enter the pelvic brim early in parturition, the uterus and its contents are steadied and held in their natural position. When, however, the brim is contracted, the oblong mass unfixed at its lower extremity sways to and fro with every gravitatory impulsion, and transverse and oblique fetal positions are readily produced.

Narrowed pelvis also obstruct labour in the following way. The fetal head impinging upon the obstructing point causes rupture of the membranes and premature escape of the liquor amnii. So frequently does this occur that obstetricians apprehend and look for pelvic distortion when it takes place. The retarding influence of early evacuation of the waters is well known. Some have endeavoured to prevent their complete escape by placing the patient on her back with the hips raised.

Prolapse of the funis is also an accident sometimes due to narrowing of the pelvis. The waters breaking before the head has entered the pelvis, room is left for the cord to fall between the two, and this is more likely to happen if the patient be at the time sitting, standing, or kneeling. The recumbent posture should be strictly observed where this accident is anticipated. The position, however, need not be maintained after the fetal head has been moulded and forced into the pelvic cavity.

(γ.) *From Anomalies of Pelvic Inclination.*—The inclination of the pelvis should vary according to the stage of parturition. In the first stage it should be normal. In the second it should be less than normal. Too great inclination is caused by pelvic distortions and antrorsion of the gravid uterus. It prevents the fetal head entering the brim, and causes it to rest upon the symphysis pubis. Too little inclination during the second stage obstructs labour, by placing the axis of the pelvic outlet at an angle so far from the line of uterine expulsion as to diminish its power.

These anomalies of pelvic inclination may be produced or remedied by posture. Excessive inclination may be prevented by flexing the spine, and this is best done mechanically; for if the abdominal muscles be employed they will, by compressing the uterus, force its fundus towards the spine, and thus defeat the end in view. It may be accomplished by supporting the shoulders and hips whilst the patient is supine, and it may be safely effected by the patient placing her feet against some fixed object and bending herself forward by dragging at a towel. Too little inclination during the first stage may be remedied by the patient reclining on her back with a doubled pillow under her loins and little support to the shoulders. When parturition is in every other respect normal, it may be obstructed by faulty pelvic inclination; care therefore is necessary, without unduly restricting their movements, to warn patients not to assume such positions as will at any stage so tilt the pelvis as to cause it to present the axis of its inlet and outlet in lines unfavourable to fetal expulsion.

(δ.) *From Anomalies of the Pelvic Articulations.*—Physiological, traumatic, and morbid conditions of the pelvic articulations have a very marked effect upon the postures of patients. They sometimes obstruct labour by making it impossible for a woman to place herself in an expediting parturient position, but they are more particularly interesting from the effects which they have upon posture in general. The ligaments of the pelvic joints become so relaxed in some women during gestation that they can with difficulty stand or walk. The pelvic articulations are also subject to

rupture during the passage of the fetal head through the pelvis. The symphysis pubis is most usually affected, and the results of the accident may be much increased by subsequent morbid action. The influence of this condition of the symphysis is graphically related by Denman:—"When the patient lay in a horizontal position she was perfectly easy, there being no weight upon the pelvis. When she was erect, the weight borne by the symphysis being greater than it could support, she could walk before she could stand; or, if she stood, she was obliged to move her feet alternately, as if she were walking; or she could stand upon one leg better than upon both, and better with her feet close than at a distance. By these various movements she took the superincumbent weight from the weakened symphysis, and conducted it by one leg in a straight line to the ground. The fatigue of walking or of the alternate motion with the feet being more than she was able to bear, she was obliged to sit. When she first sat in her chair she was upright, resting her elbows upon the arms of the chair, by which means part of her weight was conducted to the chair, not descending to the pelvis, which was also propped; but there being then more weight upon the symphysis than it was able to bear for any long time, and her arms being weary, by putting her hands upon her knees she took off more of the superincumbent weight, conducting it by her arms immediately to her knees. When she rested her elbows on her knees the same effect was produced in an increased degree; but this position becoming painful and tiresome, she had no other resource, and was obliged to return to her bed." The production and removal of pubic impingement at the symphysis by the various erect postures is here most beautifully illustrated.

Anchylosis of one or more of the pelvic articulations results invariably in distortion. The normal developmental influence of the lines of pressure produced by the various motions and positions of the body is disturbed, and deformities and contractions of the pelvis follow, with all their obstructing influence upon parturition.

(ε.) *From Malposition of the Fetus.*—In the same way as



abnormal pelvic inclination may prevent the fetal head entering the brim, so may an unnatural inclination of the fetus produce the same effect. When the pelvis is contracted and the abdominal walls relaxed, fetal malpositions are very liable to take place. These displacements are determined by the posture of the mother, the breech of the child, as has already been explained, swaying hither and thither with every change of maternal position. The inclinations of the fetus may be to the front, back, or sides. If it be to the right the fetal head will press against the left rim of the brim. If the body of the mother, when this condition exists, be laid upon the right side, the fetal head will slip beyond the brim, and the shoulder will take its place. If, on the other hand, her body be inclined to the left, the malposition will be remedied, the os uteri will be restored to its normal position, and the expulsive uterine efforts will act in a direct line with the axis of the pelvic inlet. These observations apply conversely if the inclination of the fetus be to the left. In cases of pendulous abdomen, when the breech of the fetus falls forward, dorsal recumbency will restore normal relations. When the fetal head is tilted-upon the symphysis pubis and its breech backward to the spine, the knee-head-ascending posture will rectify the displacement.

In all cases of contracted pelvis with lax abdominal walls it is better to advise patients to remain in a suitable recumbent posture until the head of the fetus is engaged in the pelvic cavity. With them more particularly posture at the commencement of parturition determines the position and presentation of the fetus.

(e.) *Complicated Parturition.*—The complications of parturition which may fairly be attributed to posture are very numerous. Some of these have already been mentioned under anomalies of parturition ; others of a more definite character will be now considered.

(a.) *Shortness of the Umbilical Cord.*—When the funis is abnormally short, the patient experiences when erect or walking a sensation of dragging or tickling at the fundus uteri. This is produced by the fetus dragging down the portion of the uterus to which the placenta is attached, and

causing slight inversion, which it is believed may sometimes be felt through the abdominal walls. If when this condition exists the patient should receive a sudden shock from stumbling or falling the funis may be ruptured or the placenta separated. Avoidance of succussion and much recumbency are the prophylactic measures to be taken when shortness of the umbilical cord is apprehended.

(β.) *Prolapsion of the Umbilical Cord.* — The principal causes of this serious accident are pelvic deformity, the erect posture during parturition, and a long cord. When the displacement has occurred gravitation may be employed to effect or assist reposition. It may be used to act upon the fetus or funis, or upon both at the same time.

As early as 1724 Mawbray appreciated the use of posture in partial prolapsion of the navel string, and thus described his mode of treatment:—"It happens sometimes that the string without hanging down is variously compressed between the head and the bones of the pelvis, which soon occasions the infant's inevitable death. In which case, if pressed against the ossa pubis, having laid the woman on her back with her head low, and the lower part of her body raised, I would press back the infant's head, and put the string as much as possible behind it; upon which then I would bring the head forthwith into the pelvis, unless it be more convenient to turn and extract it by the feet. As also, though seldom it may happen, that the umbilical cord may be pressed back by the head against the os sacrum: in which state of affairs I would turn the woman, if strength may permit, upon her knees, whilst I employ either hand on the back parts, in order to remove the head how firmly soever fixed. Whereas, if the patient be weak, I would lay her upon either side, drawing up one foot to her belly for the advantage of obtaining more room in order to effect the same thing. But if it chances to be pressed against either of the ossa ilia, having laid the woman on the contrary side, with the lower part of her body elevated, I would remove the head with the opposite hand and free the string: proceeding otherwise, as in the former cases, with head or feet as I should find most convenient." Unfortunately, Mawbray in giving these directions did not

remember that the fetus had a breech as well as a head. Many of his instructions, if carried out, would produce the opposite effect to the one desired. If the funis were compressed upon the left side he would place the patient on her right, hoping the head of the fetus would fall away from the funis, but the real effect would be to make the breech sway over to the right, and the head to oscillate still further to the left. When posture is used to alter the position of the fetal head this movement of the whole fetus must be remembered.

Of late years the influence of gravitation has been brought to bear upon the cord itself. To effect this the patient is placed in such a position as to cause the uterus to be held with its os upwards and its fundus below. This is most easily accomplished by placing her in the knee-head-descending posture. Thus situated, reposition and retention of the funis is undoubtedly facilitated, for the tendency of its own weight must be to make it fall towards the fundus. If the patient be not sufficiently strong to maintain herself in this position, she should lie in a semiprone posture with the hips raised by pillows. The gravitatory effect will thus, with only slight loss of its remedial power, be secured without fatigue. In either of these positions postural influence acts both upon the fetus and funis, for whilst it favours the reposition of the latter, it also removes the pressure of the former from the cervix, and opens up a passage for the return of the cord. When the funis has been replaced it is no longer desirable to maintain these postural relations. The head of the fetus should now be encouraged to enter the pelvic cavity, for once there it shuts the door to the exit of the cord, and prevents its re prolapsion.

In cases of slight prolapsion, before the liquor amnii has escaped, postural treatment will often be found sufficient to produce reposition.

(γ.) *Rupture of the Uterus and Vagina.*—Indirectly posture is the cause of many uterine and vaginal lacerations. Any of the postural causes of obstructed parturition may tend to produce these accidents. Of all these, however, the distorted pelvis is the most common, for the fetal head urged by violent pains presses for a long time the wall of the parturient canal



against the points of obstruction until its structural life becomes impaired, and it at length gives way.

In the after-treatment of these ruptures the position of the patient is believed by some obstetricians to be of importance. Collins thinks psoas abscess as a sequel to rupture of the uterus may perhaps be prevented by suitable posture. "Would placing the patient in a position so as to elevate the shoulders and body, and thus facilitate the escape of any foul discharge that otherwise might lodge about the lacerated parts, be beneficial? This, I have no doubt, might be effected with perfect safety to the patient by attention to the formation of her bed, and perhaps if the collection of matter about the ruptured parts were prevented, or had a ready exit, its extension to the lumbar regions might be counteracted." Fabre also mentions the same treatment for the prevention of peritonitis after rupture of the vagina:—"On a fait remarquer que la position verticale de la femme facilitait la sortie des liquides épanchés dans le ventre; ce fait semble faire naître le précepte de donner cette position après l'extraction de l'enfant. Peut-être pourrait-on espérer par là affaiblir les causes toujours imminentes de la péritonite." This form of postural treatment is the same as has been recommended by some obstetricians for promoting lochial drainage. It will be considered more fully hereafter.

(δ.) *Laceration of the Perineum.*—The position assumed by women during parturition has a great influence upon the frequency of perineal laceration. When the dorsal reclining and supine postures are adopted during the completion of the second stage of parturition, the fetal head has to ascend the perineal incline in opposition to gravitation, and laceration is found to occur much more frequently than when the patient kneels or lies upon the side. Indirectly posture may cause laceration by producing those deformities of the pelvic arch which force the fetal head, when passing through the outlet, back upon the perineum. Indirectly also laceration may result from the tough unyielding condition of the perineum caused by perpetual sitting.

The postural treatment, whether or no stitches be required, consists in keeping the legs together, and securing them by

a bandage round the knees. Lateral recumbency should be observed during the healing process, for in the dorsal positions the skin of the sacral region is liable to be dragged upwards, and thus disturb and impede union. The discharge has also a tendency to gravitate into the vagina.

(ε.) *Parturitional Hemorrhage*.—The almost universal postural cause of hemorrhage before, during, and after parturition is standing or sitting. These positions increase the quantity of blood in the uterus, and accelerate the circulation by quickening the heart's action.

It would scarcely be advisable to extol too highly the influence of posture in checking parturitional hemorrhage, for some might be induced to trust to it when more energetic measures were required. There is nevertheless great potency in the postural method, and some have gone so far as to declare "that death from uterine hemorrhage will rarely occur if the head be kept lower than the uterus" (Ansell). From whatever cause or source the hemorrhage may arise, and at whatever time, the postural treatment is the same, and should always be enforced, whether additional means be required or not.

The postural treatment of uterine hemorrhage is very ancient. In the Hippocratic writings it is mentioned, and a simple and effective way of raising the hips above the head is given. After recommending cold effusions and other remedies, the author writes—"καὶ τὴν κλίνην ἀπὸ τῶν ποδῶν ὑψηλοτέραν εἶναι, καὶ στορέσαι ὥδε." This excellent plan of raising the foot of the bed has been almost lost sight of. It is, however, one of the best methods of applying posture in parturitional hemorrhage. It necessitates no moving of the patient or arrangement of pillows. It is as ready as it is efficacious, and may be used with advantage in cases of uterine hyperemia as well as hemorrhage. It is also especially useful where the patient is faint, for the blood gravitates to the brain. In the treatment of moderate cases of flooding, it may be sufficient to raise the hips of the patient upon a pillow, whilst she lies in a semiprone posture, with her head low. Thus placed, the blood has an opportunity of falling into the lower extremities, as well as the trunk, arms, and

head, and the pelvic circulation is thus relieved as much as possible. When the loss has been very great, and the patient is apparently sinking, the legs and hips should be raised high, so as to throw as much blood as possible towards the brain. Necessity for transfusion may in some cases be thus avoided.

(9.) *Inversion of the Uterus.*—This accident may result if a woman during the end of the second stage of parturition be allowed to remain erect. The precipitation of the suddenly expelled fetus to the floor causes the fundus to be forcibly dragged down through the os—the fetus acting upon the funis, the funis on the placenta, and the placenta upon its seat of uterine attachment. The same displacement may be caused by sitting or standing postures soon after the completion of fetal parturition, for in these positions the superincumbent weight of the intestines, pressing upon a flabby and badly contracted uterus, may force the fundus down through the relaxed cervix.

In reducing recent inversion of the uterus, the patient should be placed either in the semiprone position with the hips raised, or in the knee-head-descending posture.

(10.) *Parturitional Convulsions.*—Uremic eclampsia occurring before or during parturition may be caused by structural or functional disorder of the kidneys. The latter is frequently produced by pressure of the gravid uterus upon the uterus and renal veins, when the patient remains too long in the sitting or standing postures. Convulsions of this origin rarely appear before the uterus has reached considerable size, that is, before the fifth month. They usually come on during the last month or two of gestation, but more particularly just before or during parturition, the peculiar nervous condition of the patient at that time being sufficient to convert the predisposition into a reality. They disappear when parturition has reduced the size of the uterus. Passive renal hyperemia is the cause of this form of eclampsia. The renal veins are obstructed by uterine compression and distension, and exudation from the renal capillaries follows. Albuminuria occurs most often in first gestations, and this is accounted for by the walls of



the abdomen being less yielding, and thus causing greater depression of the uterus. Dr. Brown-Séquard found by placing a patient in such a posture as to remove the pressure of the uterus from the renal veins that albuminuria disappeared, but that it returned when she again assumed her ordinary position.

The postural treatment of convulsions may be preventive or curative, and both ends are to be obtained in the same manner. Patients suffering from albuminuria during gestation should not remain upright longer than is necessary to enable them to take sufficient exercise to keep up their general health. When convulsions have arrived, and parturition cannot be completed, such posture should be recommended as will remove the uterine pressure. The semiprone position, with the hips raised, would be best, as it would have the desired effect, and not interfere with the administration of chloroform.

### 19. *Placental Parturition.*

Too much importance cannot be attached to the management of the third stage of labour, for upon the skilful removal of the placenta depends the speedy recovery and future health of the mother. After the expulsion of the fetus, another labour upon a small scale commences; the uterus is in the same position as it was at the beginning of parturition, and from it the after-birth has to be expelled. This should be the act of the uterus. If we wish to assist it by gravitation, the patient must be placed as nearly as possible in the posture which at the commencement of labour is theoretically correct—dorsal reclination. This position may be assumed at the end of the second stage with safety and advantage, for thus placed, besides the gravitatory advantage, the fundus of the uterus may be easily reached and pressure effectively employed, if it should be necessary. In this posture also the air is prevented from entering the vagina.

*20. Anomalies of Placental Parturition.*

The expulsion of the placenta is sometimes delayed by uterine displacements. Of these the one which most frequently causes difficulty is antrorsion. This will, however, be found to occur less often if dorsal reclination be adopted during the third stage of parturition. Any of the other displacements may be readily reduced by appropriate postural treatment.

The Hippocratic writings hand down to us a most ingenious but reprehensible method of treating, by gravitation, retention of the placenta. It is thus described:—"If the after-birth does not come away early, the child should not, if possible, be detached from it. The woman should be seated on a stool and the child suspended upon something raised, so that its weight tends to draw out the after-birth. This should be done gently, without violence, so that no unnatural forcing of the parts should cause inflammation. To this end some wool newly carded, and forming a bulky volume, should be placed under the child upon two leather bags tied together and filled with water, which is to be emptied by degrees—the wool to be above the bags, and the child above the wool. The two leather bags are then to be pierced with an awl, so as to allow the water to escape slowly. As it runs out the bags collapse, and as they collapse the child draws down the cord, and the cord the after-birth. If the woman cannot remain seated on a stool, she must be placed on a perforated chair with a back. If she be too weak to sit up at all, the head of the bed should be raised as much as possible, in order that the weight of the child may cause a dragging down. The patient should be fastened below the armpits to the bed outside the counterpane by means of a wide soft band, so that the body may not move when the bed is lifted. In the same manner, if the cord breaks, or if it be cut too soon, by attaching suitable weights to it the after-birth will be drawn away."

Posture can never be depended upon for the removal of the placenta, either in normal or untimely parturition. Operative procedures are usually necessary when any delay

arises, and it is only as an auxiliary on these occasions that positional treatment can be of any avail.

### 21. *Puerperal Posture.*

It is exceedingly interesting and instructive to observe the various opinions which obstetricians have held in reference to the postural treatment of women after parturition. In their own words, therefore, the reader is here presented with excerpts from the writings left us by men well known in obstetric literature. Space renders it necessary to take these quotations from British authors only. Similar variations of opinion may, however, be found in the works of foreign writers on midwifery.

PRIMROSE.—“Crura habeat decussatim collocata ut impediatur transitus aeri frigido.”

SERMON.—“There must be laid under her hams a little pillow doubled, that she may be somewhat kept up; so that her thighs and legs lye not strait, let her neither lye along nor sit just upright, but between both, having her head and body rather raised than laid low, that her natural purgations may with more ease pass from her.”

SMELLIE.—“The patient must be kept quiet in bed till after the fourth or fifth day, and then be gently lifted up in the bed clothes in a lying posture, until the bed can be adjusted, into which she must be immediately reconveyed, there to continue for the most part till the ninth day.”

CAMPBELL.—“After a suitable period has been allowed for repose the patient is to turn upon her knees to void urine, accumulations in the vagina, and excoriations are thus prevented. Few of the better ranks leave their beds before the end of the first week.”

GOOCH.—“The recumbent posture must be strictly preserved, she must not on any pretext be got upright for one moment.”

DENMAN.—“I am fully persuaded that laying aside all refined speculation those patients will fare best and recover most certainly and speedily by whom the least change from their former habits is made.”



RYAN.—“The woman should not rise or walk about while it (the lochial discharge) continues.”

DAVID DAVIS.—“The duty of maintaining steadily a horizontal position during many days after delivery should be communicated at once to the patient.”

BURNS.—“The patient ought not to rise earlier than the third day, and in a day or two longer she may be allowed to be dressed and sit a little.”

BLUNDELL.—“It can seldom be necessary or proper to raise her to the erect posture.”

WHITE.—“Getting out of bed is the most effectual and safest method of promoting the lochia. In women confined to a horizontal position for many days together, both the stools and the lochia are prevented from having a free exit. The lochia stagnating in the womb and in the folds of the vagina soon grow acrid. These are in part absorbed by the lymphatics in the womb and vagina, and the effluvia from them make the air in the bed and in the room more putrid; this air is taken into the lungs, and is then again received into the circulation. True puerperal fever is originally caused by a putrid atmosphere, or too long confinement of the patient in a horizontal position.

“In a few hours after delivery, as soon as the patient has had a little rest, she should sit up in bed. The patient should lie very high with her head and shoulders, and should sit up in bed many times a day, especially when she takes food, and as often as she suckles her child, and should kneel whenever she has occasion to make water, which should be done often. This frequent upright posture is of the utmost consequence, and cannot be too much enforced. It prevents the lochia stagnating, the stools and urine from being too long retained, and promotes contraction of the uterus and abdominal muscles. My patients generally sit up in bed in a few hours after delivery, some of them get out of bed the same day, most on the second, and none exceed the third; and lest any inconvenience should be supposed to arise from this early upright posture, I think it necessary to declare that none of whom I have delivered are troubled with any prolapsus vaginæ or any other complaint which I have the least reason

to suspect could possibly arise from such treatment. I speak from facts which cannot deceive me, founded upon my father's experience of more than sixty years, and upon my own of above two-thirds of that period."

KIRKLAND.—"In moving the patient to her own bed after she has recovered her spirits, I always direct her assistants to raise her up a little, or if she is able, that she should walk a few steps; as by thus stirring her about whatever blood may have lodged is commonly discharged. Every person whose business requires him to attend lying-in women must have observed where there has been little or no discharge of the lochia during lying in bed, for two or three days, that in consequence of occasionally getting up or moving into an erect posture, large coagula of blood have been discharged by their own weight, and all has gone on well. Therefore, when we suspect coagulated blood to be lodged in the uterus a day or two after delivery, the patient should sit up in bed, or even be carefully gotten up, if necessary; by which means I have seen future mischief prevented by the coming away of the coagula."

RAMSBOTHAM.—"The woman must be kept in the recumbent posture as much as possible for at least a week. It is better that she should not sit up even to have the bed arranged for that time."

ROBERTON.—"After delivery the women (wives of Manchester artisans) will often on the same day sit in bed to dress and undress their children. By the fifth day at the latest she is up and dressed, and if nothing unpropitious has happened, engages in her ordinary avocations. The smaller mortality of these women (one in seven or eight hundred) who perform unaided their household work deserves and will no doubt yet receive further investigation."

TYLER SMITH.—"Those who get up too early suffer from hemorrhage and prolonged lochial discharge owing to the absence of valves in the uterine veins and the momentum of the blood downwards. The patient should remain eight or ten days pretty much in the horizontal position."

No attempt will here be made to criticise these opinions. Many of them contain thoughts startling and worthy of close

attention. The exclusion of air from the vagina, the prevention of lochial stagnation, and the influence of the erect posture in producing uterine hyperemy, and displacement, are all points claiming our careful attention as much now as of yore.

## *22. Lochiation.*

After parturition the exfoliation of the decidua is accompanied by a flow of lochial fluid analogous to menstrual fluid. The act of excretion being in one case called menstruation may not inaptly in the other be designated lochiation. To insure the safe and complete execution of this function the position of the patient must receive attention. The best posture is that which provides free lochial drainage without producing hyperemy or displacement of the pelvic organs. To effect this no one position should be prescribed or permitted, but the patient should be encouraged to change her positions naturally and as she would do ordinarily when lying down. She should also be allowed to sit up for a few minutes in bed when she takes food or nurses her infant, and more especially during the latter act, for the uterine contraction produced by suckling expels lurking clots and fluid, and the sitting posture gives a chance of their being removed by gravitation from the vagina. She may also be permitted to assume the knee-head-ascending or sitting postures when the bladder or bowels are relieved. These concessions are, however, made on the supposition that the patient is strong and healthy. Also that she has passed through the parturient period without difficulty or accident, and no special counter-indications exist. The management of each case must of course be regulated according to its character. No posture should be insisted upon which is painful to the patient, although it may be theoretically correct. Sometimes patients cannot lie at ease on either side. In such cases dorsal reclination should be advised, for elevation of the shoulders so alters the axis of the vagina that lochial stagnation may be thereby prevented.



23. *Anomalies of Lochiation.*

Disordered lochiation produces symptoms varying from slight uneasiness to pain of the most distressing character and fever most fatal. It seems strange that a process so simple should be attended with such dangerous results ; but the fact is indisputable. Careful consideration of the subject is therefore necessary.

(a.) *Obstructed Lochiation.*—Posture may prevent the free escape of the lochial fluid in two ways ;—1st. By allowing the patient to remain in such a position as will cause the fluid to stagnate by gravitation, the orifice of the utero-vaginal canal being uppermost ; 2nd. By producing occlusion of this canal by utero-vaginal displacement.

(a.) *Stagnation.*—Cessation of the lochial flow has at all times been looked upon as a serious symptom. When it results from stagnation the position of the patient will be found to be such as to allow the uterus and vagina to remain below the level of the vulva. Of these two the vagina is most important, for the uterus, by its contractile power, is able to expel its contents, however it may be placed, but the vagina is some time in recovering from its great distension and regaining its normal calibre. When a patient is placed flat on her back, a posture which ignorant nurses are fond of prescribing, and kept lying so for many days, the axis of the vagina inclining from before downward and backward, must necessarily favour the stagnation of the lochial discharge. Retained in the vaginal fundus it decomposes, becomes offensive, and by resting in contact with the almost invariably wounded surface of the cervix uteri produces alarming symptoms.

(β.) *Retention.*—The exit of the lochial fluid may be arrested by mechanical obstacles of direct or indirect origin. Directly, the utero-vaginal canal may be occluded by abrupt bends in it caused by postural displacements of the heavy uterus. Indirectly, retention may result from displacement of the uterus produced by the weight of the abdominal viscera when the patient too soon rises ; also by over-tight bandaging,

which forces the enlarged uterus into the pelvic cavity before there is room to accommodate it.

(b.) *Septicemia*.—Obstructed lochiation is a frequent cause of puerperal fever. This fact renders the question of puerperal posture one of the utmost concern. To advise a patient to remain in a position after labour which will render her liable to lochial stagnation or retention is to submit her to a most unjustifiable and dangerous ordeal. During labour the cervix uteri is nearly always slightly lacerated or abraded, and in this condition it is ready to absorb septic matter from any decomposed lochia in which it may be bathed.

Postural treatment may prevent and, if discovered early, cure septicemia. It will be much less frequently met with if patients are treated in a more rational way, and the happy medium hit between too little and too much liberty of motion after delivery. Of the two evils, however, too much liberty is the less. The woman who begins her household work soon after the birth of her child will have a better chance of recovering well than she who lies perfectly quiet on her back for a fortnight. When symptoms of septicemia appear the utero-vaginal canal should be washed out with an antiseptic fluid, whilst the patient is placed on her side with the shoulders raised, after which care should be taken by the adoption of suitable postural treatment to prevent the reaccumulation of lochial fluid.

(c.) *Excessive Lochiation*.—If a patient after parturition rise too early, or sit and stand for too long a time, gravitation of blood to the uterus will take place, and excessive lochial flow will frequently follow. Although lochiation may have nearly ceased it will be liable to return again under these circumstances; the discharge which may have become scanty and faded in colour will increase in quantity and again appear red, or the lighter coloured discharge may become more copious without change of tint. Excessive lochiation weakens the patient, and is symptomatic of uterine hyperemia with its train of consequent disorders.

The postural treatment of this condition is rather perplexing, for if, as is indicated, the hips of the patient be raised, lochial stagnation will be produced. This, however,

is the only remedial position, and it should be prescribed. If the shoulders be raised every eight hours, and antiseptic vaginal injections used, the evil influences of lochial stagnation may be averted. In adopting this posture care should be taken that the abdomen of the patient be properly bandaged, for without this precaution vaginal respiration, tending to hasten lochial decomposition, will probably occur.

#### 24. *Involution.*

Although this term is usually employed only to express that gradual process by which the uterus after parturition is reduced in size, it has really a much wider signification. Involution in its general puerperal sense includes a number of special structural restitutions which may be effected by contraction or atrophy. These influence alike the uterus, vagina, vulva, abdominal walls, heart, distended veins, &c., and all must be included under puerperal involution.

(a.) *The Uterus.*—Marvellous is the process of uterine involution. In six weeks this organ from weighing three pounds becomes reduced to three ounces. To insure this rapid atrophic action diminished blood supply is necessary, and this should be effected by contraction and gravitation. Uterine contraction is best secured by suckling; gravitatory hyperemy is best avoided by suitable posture.

(b.) *The Vagina and Vulva.*—Although these, like the uterus, undergo hypertrophic change during gestation, it is to a very much less extent. They have, however, during parturition to suffer great distension, and some time must elapse before they can return to their normal substance and calibre. Both these processes may be assisted by the patient adopting such positions as will prevent passive pelvic hyperemy.

(c.) *The Abdominal Walls.*—If a woman passes the greater portion of her gestational period standing or sitting, the weight of the fetus pressing upon the lower and anterior part of the abdominal walls will gradually distend them until they become thin and weak, and muscular splitting occurs. A carefully-applied bandage, more especially when



the patient walks or sits, will materially assist them in regaining their contractile power and former tension.

### 25. *Anomalies of Involution.*

Posture has a marked influence upon all the puerperal involutionary processes. It may accelerate or retard them, and, in the latter case, lay the foundations for prolonged ill-health, or even give rise to fatal accidents.

(a.) *The Uterus.*—The functional disturbances which result from arrested involution have already been considered. Its influence upon the structure of the organ will, therefore, now be noticed.

(a.) *Subinvolution.*—This is very frequently due to passive pelvic hyperemy, caused very generally by the continuous dorsal reclining posture which ladies adopt during puerperal convalescence, or by the constant standing and sitting which poor women are obliged to commence and continue during the same period. In these postures the blood gravitates to the uterus, and supplies nutriment to the tissues which should be undergoing atrophy. No muscular action accelerates the circulation and keeps the blood in motion. The reclining lady, therefore, suffers more than the poor woman, whose duties necessitate change of position.

(β.) *Displacement.*—During involution the uterus, owing to its weight, is liable to become displaced. Prolapsion occurs very frequently. The womb may also gravitate in various directions, and most commonly backward, producing retrorsion. This is caused by prolonged supine posture after parturition, and is very apt to become permanent, for the uterus during involution assumes the shape impressed upon it by the distortion, and cannot readily be made to part with it except by artificial or physiological redevelopment. Suitable puerperal posture will prevent these dislocations.

(b.) *The Vagina and Vulva.*—Whilst gestation is progressing these organs become developed, the vagina growing large and wide and the vulva gaping. It is some days before involution restores them to their natural state, and during this time disorders may arise of serious importance.

(a.) *Vaginal Respiration*.—This peculiar pseudo-function generally displays itself when subinvolution of the vulva, vagina, and a relaxed condition of the abdominal walls exist.

(1.) *Mechanism*.—The mechanism of vaginal respiration is exceedingly simple. The pelvic cavity is like the curved barrel of a bony syringe. The pelvic and abdominal contents form the piston, and this piston can be actuated in two ways.

*Thoracic*.—If the perineum of a woman when lying down be watched, it will be observed to protrude and recede with every pulmonary expiration and inspiration. These motions are caused by the to-and-fro movements of the viscera responding to the impulsion of the respiratory muscles. The author has observed a case in which, the vulva being relaxed and the uterus prolapsed, air was drawn into the vagina by expiration and expelled by inspiration. This occurred at every respiration, and annoyed the patient whilst in bed by producing an audible puffing sound each time air escaped from the labia.

*Abdominal*.—This form of vaginal respiration is caused by gravitation of the abdominal viscera, and its extent is determined by the tension of the abdominal walls. When the contents of the pelvis and abdomen are allowed to fall below the level of the vaginal orifice, gravitation draws them out of the pelvic inlet and produces the piston-like action already described. If from any cause the mouth of the vagina opens, or is opened, air will rush in, and the depression in the perineum will disappear. This is the most frequent form of vaginal respiration. It occurs to a greater degree when the abdominal walls are relaxed from childbearing, and with more serious consequences during the puerperal period than at any other time.

(2.) *Septic Influence*.—It is well known that the contact of air with the lochia promotes its decomposition, and thus favours the occurrence of puerperal fever. The older writers fully understood the importance of excluding air from the vagina after parturition. Thus we find Primrose advising the puerperal patient to insure vulvar occlusion by lying with her legs crossed.

(3.) *Venous Aspiration.*—A vacuum having been formed, and air entered the vagina, it is easy to understand how this suction-power may be communicated to the veins, and cause any fluid which may be in the neighbourhood of the open mouths of varicose veins or large sinuses to enter. It matters not what this fluid may be. Whether it be lochial discharge or air the result will be the same. Many of the cases of fatal collapse after labour, caused by entrance of air into the veins, are doubtless consequent upon vaginal respiration, and many cases of septic absorption are no less likely to be caused by the same mechanism. The same aspirating power will cause air or fluid to enter abscesses opening into the vagina, also into the peritoneal cavity or cellular structures (emphysema) through vaginal lacerations.

(4.) *Treatment.*—Vaginal respiration, although annoying to the patient, is not dangerous except during the puerperal period. To prevent it two prophylactic measures are to be taken—abdominal support and suitable posture. After placental delivery a broad binder should be applied, with moderate pressure, over the whole abdominal surface. This, besides affording comfort to the patient, will obviate vaginal respiration by preventing the abdominal viscera from receding from the pelvic inlet. After this any comfortable reclining or recumbent positions may be adopted in turn for the first few days of the puerperal period. Until the normally antverted uterus has entered the pelvic cavity the dorsal reclining or supine posture may at times be used.

(c.) *The Veins.*—The venous trunks in the pelvis, legs, and abdominal walls nearly always become dilated during the latter months of gestation, owing to the obstruction to the return of the blood, caused by pressure of the gravid uterus. The distension thus produced occasionally becomes excessive, and a varicose condition of the veins is observed. This dilatation, although it may not entirely disappear, will, with proper postural treatment, become much reduced as the general process of involution proceeds.

(a.) *Thrombosis and Embolism.*—In the distended pouches of these varicose veins the circulation stagnates and clots form. If this has occurred, danger during the puerperal



period must be apprehended, for the obstruction to the circulation being removed and venous involution proceeding, the detachment of one or more of these clots is to be feared. There can be little doubt but that embolism is often thus originated.

Where a varicose condition of the above-mentioned veins is known to exist during gestation, great care should be taken of the patient whilst involution progresses. The mechanical detachment of clots should be avoided by rest and recumbency. No exertion must be permitted, and the circulation must be kept quiet by horizontal posture.

## 26. *Urination.*

In the female this is a very simple function, the urethra being short and capacious, and offering little resistance to the free flow of urine. Posture is naturally employed during the act in such a manner as to assist the expulsive efforts of the bladder by compression and gravitation of its contents. The squatting position affords the former, the thighs pressing upon the bladder through the abdominal walls. The latter is best insured by maintaining the trunk upright, and slightly bending forwards.

## 27. *Anomalies of Urination.*

The functions of the urethra and bladder are very liable to be disturbed by disorders of the neighbouring organs. In fact, although some of the anomalies of urination are to be looked for in abnormal conditions of its proper viscera, the greater part of them will be found to arise from uterine, vaginal, and other displacements.

(a.) *Obstructed Urination.*—The causes of postural origin which lead to obstruction of the flow of urine are dislocation, compression, occlusion, and hyperemy, and these may occur either in the urethra or bladder.

(a.) *Urethral.*—Dislocations of the urethra have already been referred to in a previous chapter. They are usually of indirect origin, being produced by displacements of organs to

which it is more or less intimately attached. It is pulled backward and downward by retrorsion of the bladder, and also by prolapsion of the uterus. It is also seriously dislocated by ovarian, uterine, and other pelvic tumours, and by retrorsion of the uterus, especially during gestation and involution. The urethra may be compressed against the symphysis pubis by an enlarged uterus, or by post uterine tumours pressing the organ forward. Vaginal tumours and uterine polypi which have descended into the vagina will also, when the patient is erect, obstruct the urethra by pressure, as also will vaginal pessaries. Urethral occlusion may result from polypi, foreign bodies and calculi gravitating into it from the bladder. Hyperemy of the urethra may cause obstruction by producing intumescence of its mucous membrane, or hyperesthesia with spasmodic contraction.

As obstructions of urethral origin can be caused in so many different ways, evidently postural treatment must also be various. It is remarkable what a number of odd positions patients will discover by experience, and place themselves in, to assist in alleviating or overcoming the distress of obstructed urination. Some will lie on the back, face, or sides, others will kneel or prostrate themselves, or sit or stand, and at the same time incline their bodies forward, backward, or to either side. The particular postural remedy for each cause must be selected; as a general rule, however, recumbency will be found most efficacious. By the early and intelligent use of posture the employment of the catheter and other operative procedures may often be avoided.

(β.) *Vesical.*—The bladder may be dragged out of its position by dislocated annexed organs; it is also liable to be drawn down, when the patient is erect, by the weight of urine resulting from prolonged voluntary retention. When the vagina is relaxed, and the vesical prolapsion extreme, complete urination is impossible. Obstruction may also be caused by compression. Any intra-abdominal weights rendered more powerful by debased pelvic inclination will produce this. The most common is the gravid uterus. Many women suffer during the latter months from obstructed urination.

To them sitting or standing is torture, and recumbency is their only comfortable position. This obstruction is not entirely due to mechanical compression, but to the hyperesthesia and tenesmus which passive hyperemy produces.

Sermon understood the influence of posture in causing vesical compression. "Sometimes it happeneth through the ponderosity or weightiness of the womb which resteth in the bottom: so that women with child cannot make water. Then with both their hands let them lift up the bottoms of their bellies, by which the body of their womb will be hindered from pressing down and crushing the bladder." To prevent pressure of the bladder during gestation, a woman must adopt such a position when erect as will preserve the normal pelvic inclination. Debased inclination of the pelvis removes the weight of the uterus from the anterior abdominal walls, and throws it more directly into the pelvic inlet. Thus vesical compression takes place, and is intensified by the succussion of walking.

(b.) *Frequent Urination*.—All the postural causes of passive vesical hyperemy will cause an irritable condition of the bladder, and inability to retain more than a small quantity of urine. Displacement, direct pressure, and the erect position will have the effect of bringing into existence various forms of hyperemy and consequent hyperesthesia. Vesical distension then becomes unbearable, and frequent urination a necessity.

(c.) *Painful Urination*.—Any of the causes of frequent and obstructed urination are apt to end in causing pain when the urine passes the neck of the bladder or traverses the urethra. Morbid changes in the mucous surfaces of these organs resulting from postural hyperemy often produce painful urination.

The postural treatment for this condition, as well as for frequent urination, is satisfactory. Both are immediately relieved by recumbency, and this position co-operating with other measures will be found materially to expedite recovery. In both also debased pelvic inclination should be avoided.



28. *Defecation.*

Posture has an easily recognisable effect upon this function. As in urination, the expulsion of feces from the rectum may be assisted by position. The normal postures for defecation are sitting or squatting. In the former the descent of the matter is favoured by gravitation. In the latter, more especially when the body is inclined to the left, the advantage of abdominal compression is attained. When standing, defecation is rendered difficult by the approximation of the nates. In this posture flatus is with difficulty passed; when the knees are drawn up, however, or the legs separated, the obstacle is removed. Defecation in the recumbent position is difficult, unless the knees be drawn up or the rectal contents be fluid.

29. *Anomalies of Defecation.*

It has already been observed how great an influence posture has in causing disorders of the anus and rectum. It is equally able to produce functional disturbance.

(a.) *Obstructed Defecation.*—Either direct or indirect displacement of the rectum will cause rectal obstruction. The direct obstructions are produced by tumours of the gravid uterus, compression occurring when the body is in an erect or dorsal reclining posture. Indirectly, the maintenance of easy positions to the exclusion of exercise is a most frequent source of constipation. Succussion of the abdominal contents and contraction of the abdominal muscles, such as take place when walking, skating, running, dancing, and riding, are all powerful in promoting the onward passage of feces, and should be prescribed except counter-indicated by obstructive displacements. The constant taking of purgative pills, which is so common with women, is almost invariably due to their inactive and sedentary employments.

(b.) *Frequent Defecation.*—Passive hyperemy of the intestines and rectum sometimes results in hyper-secretion and an irritable condition of the mucous surface. A fluid state of the feces thus occurs, and a constant desire to defecate.

Both cause and effect may in these cases be readily banished by recumbent posture. Diarrhea, from whatever cause, will always be lessened, and sometimes cured, by recumbency alone.

(c.) *Painful Defecation.*—Pain during defecation, very often continuing long afterwards, is experienced by patients suffering from hyperemic disorders of the anus and rectum. Piles, fissures, and ulcers, and all the other changes of the mucous membrane of these parts, which so often afflict persons of sedentary habits, have each their own peculiar characteristic pains, varying from the dull heavy ache to the sharp agonising pang. All these may be relieved by recumbent posture, whilst other necessary treatment will be assisted by placing the patient in such a position as will prevent pelvic blood stasis. In slight cases of rectal hyperesthesia and tenesmus, postural treatment without operative interference will often be found sufficient.

*(To be continued.)*

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## ON INCISION OF THE CERVIX UTERI.

By HEYWOOD SMITH, M.A., M.D.

Physician to the Hospital for Women, and to the British Lying-in Hospital.

INCISION of the cervix uteri has been so often discussed that it would seem but little remains to be said about it, but the reasons for the operation are so various, and are not usually discriminated, that a short note on the various conditions that call for its practice may not be out of place. The different morbid states for which incision of the cervix is recommended may be enumerated as follows:—(1) dysmenorrhœa; (2) sterility; (3) intra-uterine polypi; (4) certain forms of areolar hyperplasia; (5) anteflexion, and (6) fibroids of the uterus.

(1) *Dysmenorrhœa.*—Where this symptom is due to general narrowness (stenosis) of the cervical canal associated with some endocervicitis, the condition may be denominated obstructive dysmenorrhœa. The symptoms are pain of a

forcing bearing down character, as if the womb experienced a difficulty in extruding the natural flow. The disadvantage of mere dilatation is that the cervix tends, on the withdrawal of the distensile medium, to revert to its abnormal condition. In such cases the whole canal should be slightly divided throughout its entire length, and for many days a thick sound passed to keep the canal patent. This incision is best done with a single-bladed hysterotome. The disadvantage of the double-bladed hysterotome is that, owing to the usual thinness of the blades, the incision does not begin at the moment of the first separation of the blades, and moreover the operator cannot limit his incision, and therefore it is apt to be made too deep. With the single-bladed instrument, however, the operator can regulate the depth of his incision, having the sense of touch as his guide. Or the cervix being slightly dilated (and all secretion carefully wiped or syringed away), a Sims' knife may be passed through the os per speculum, and the canal divided with some amount of precision.

(2) Sterility.—When this is supposed to be due to constriction of the cervical canal, incision should be practised as above, with this precaution, that the external os should not be divided to any great extent, as otherwise the lips are made to gape, and the natural power of imbibition by the external os impaired.

(3) In cases of intra-uterine polypi incision of the cervix is rarely needed, for the action of the uterus tending to extrude the polypus *per vias naturales*, the os uteri yields in time to the pressure, and sufficient dilatation takes place to allow of the tumour coming down. If from any circumstance, however, the os uteri does not readily dilate, the external os may be incised, but care should be taken by frequent antiseptic injections to prevent septic poisoning, which might arise from the discharge of offensive sanguineous fluid from the surface of the polypus.

(4) There are certain forms of areolar hyperplasia where the indurated deposit is limited to one lip: in such cases the small tumour bulges into the cervical canal, and produces a crescentiform os uteri: as, *e.g.*, when the anterior lip is the seat



of the disease, the posterior lip, somewhat thinned, partly surrounds the bulging on the proximal surface of the anterior lip, and embraces it: this condition is seen clearly by the speculum; if then the angles of the os uteri are incised by a knife per speculum, the uterus being set more free to act, the deposit is pushed downwards, and becomes more amenable to treatment.

(5) Antelexion.—Bilateral incision of the cervix in these cases is of very little use, though often practised. If there is a pinhole os uteri a slight incision (vide 1.) may be of use in lessening the symptoms of dysmenorrhœa, or in allowing a stem to be introduced more readily; but in these cases Marion Sims' operation of the antero-posterior division is the more rational, as leading to a straightening of the uterine canal. The posterior lip is first rather freely divided, and when this has quite healed, the finger of the right hand should be passed up till it rests in the sulcus formed by the flexion; a narrow knife is then to be introduced into the cervical canal, and the inner os divided anteriorly, the finger outside the uterus judging of the depth of the incision, lest it should be made too near to the external surface. The canal is then to be kept patent by the daily passage of a sound until the wound is healed, and no stem should be introduced until the healing process is complete for fear of septic mischief.

(6) Cases of intra-uterine fibroids alone demand *free* incision of the cervix. In many cases, where there is considerable bearing down pain caused by the effort of the uterus to extrude the mass, mere division of the cervix uteri will often lessen the painful tension, and give ease, besides affording less resistance to the onward propulsion of the tumour, and so tending to its enucleation. In such cases the incision should be free, and should be made through the whole thickness of the cervix, and may be made with scissors, though even in such cases the knife may give a better result, as it is more easily guided, and there is less chance of injury to the vaginal cul-de-sac.

In all cases of incision of the cervix it must be borne in mind that the existence of a wound in a part liable to be traversed by septic discharges is an element of danger,

and all possible means should be taken by antiseptic injections to prevent mischief which might result in pelvic cellulitis, or even peritonitis.

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## ON THE TREATMENT OF RUPTURES OF THE PERINEUM.

By THOMAS CHAMBERS, F.R.C.P., F.R.C.S. Edin.

Senior Physician to the Chelsea Hospital for Women, Consulting Physician  
Accoucheur to Western Dispensary, &c.

I HAVE read Dr. Bantock's excellent paper on this subject in the January number, and shall be glad to offer a few remarks thereon. Dr. Bantock begins by "clearing the ground." He says, "It is the fashion of systematic treatises to lay down hard-and-fast lines, which in practice are found to be purely imaginary ;" and quotes Thomas's definition as an example. Thomas divides his definition into four parts, viz. :—

- " 1. Superficial rupture of the fourchette," &c.
- " 2. Rupture to the sphincter ani."
- " 3. Rupture through the sphincter ani."
- " 4. Rupture through the sphincter ani, and involving the recto-vaginal septum."

Dr. Bantock, repudiating such detail as unnecessary, condenses his thoughts into one comprehensive focus, and defines "rupture of the perineum" to "mean *laceration of a part or the whole of the perineal body.*" The italics are Dr. Bantock's. Where is the *practical* difference in the two definitions? It may be observed that the precise definition of the systematic writer is for the guidance of those who are seeking precise information, while the concise definition of Dr. Bantock is suitable for those who, like himself, are familiar with the accident and its complications.

I am glad to be in accord with Dr. Bantock in his views as to the great importance of what may be termed the "immediate operation." They are identical with those of the late Mr. Baker Brown. I first performed this operation with

success, using the "twisted simple suture," on February 26th, 1866 ; Mr. Baker Brown having twice operated on the patient, using his "quilled suture." From that time to the present I have adopted the "immediate operation" whenever necessary, with satisfaction to myself and comfort to the patient interested. The objections raised to this operation by Dr. Moses, of New York, and those who think with him, are the expression of opinions of those whose judgment is immature from lack of experience, and are therefore to be received with that reserve due to such opinions. Dr. Bantock says "that as much skill is required in the immediate operation as the remote;" but insamuch as he gives no directions for the performance of the former operation, while he is specially particular in his directions for the latter, it is but fair to infer that in his opinion obstetricians are already sufficiently informed on the subject, and alive to its importance.

In "considering the remote operation," Dr. Bantock brings a long list of charges against it, as proposed and carried out by the late Mr. Baker Brown with his "quilled sutures." He says that "in the case of complete rupture a recto-vaginal fistula is by no means rare;" while in cases where "the rupture is incomplete a vagino-perineal fistula remains." I may be permitted to state that I have performed this operation in a number of instances since my association with Mr. Brown at the Surgical Home in 1863, and never in a single instance have I seen anything "of the accidents to which I have referred, such as recto-vaginal and perineo-vaginal fistula, &c., upwards to complete failure, and even death."

I do not mean, however, to say that Mr. Brown's operation either was or is free from objections ; but I do say it was a great step in advance in the right direction, and, moreover, it marked a distinct and important epoch in female surgery.

Dr. Bantock passes on to describe minutely what he calls *his* operation, and, after giving precise instructions as to the manner of introducing the sutures, &c., he says, "the method herein advocated and practised by myself insures complete apposition." It would thus appear beyond all question that

Dr. Bantock claims this "method," or operation, as *his*. I do not for a moment desire to call into question Dr. Bantock's claim to "originality of conception," or to detract from his well-merited reputation; but inasmuch as Dr. Aveling and myself have performed perineal operations, both in hospital and private practice, similar to the "method" adopted by Dr. Bantock, months before his method was made public, I think it desirable to place the fact on record, and to add that this would have been done last year had it not been deemed premature, having then but a few cases from which to draw conclusions which must necessarily be imperfect. I herewith inclose a woodcut from an original drawing. The patient came under my care March 28th, 1876, about two months before Dr. Bantock's case was admitted into the Samaritan Free Hospital. A similar operation, slightly modified, was performed upon a patient admitted into the Chelsea Hospital for Women under my care, May 21st, 1876, Dr. Bantock's being admitted May 25th. Dr. Aveling performed this operation in private—a bad case—June 8th, 1876. I mention these dates in order to indicate their close approximation. I may take this opportunity of stating that neither Dr. Aveling nor myself had the most remote idea that Dr. Bantock had adopted his "method" until it was announced in the *British Medical Journal*, in July, that he would read a paper "On the Treatment of Ruptured Perineum" at the forthcoming meeting of the British Medical Association at Sheffield, which, by the way, he did *not* do.

It is remarkable that an operation so similar in its *general principles* should be suddenly and simultaneously *conceived* by men working apart from each other. Could they, by any possibility, be indebted to the same source for their conception of new ideas—viz., to "the perineo-plasty proposed by Simon?" If such should be the source from whence Dr. Bantock drew the first ideas of his "method," it would have been well had he made the acknowledgment. Such is the source to which I am indebted, and I believe I may say as much for Dr. Aveling, although we neither of us follow Simon to the letter. It is true the operation differs in minor details, as performed by Dr. Bantock and myself, as will be



seen by reference to the accompanying plates. For instance, the *shape* of the denuded surfaces are not the same, but they are identical in having *three* suture margins—after Simon—rectal, vaginal, and perineal. Dr. Bantock uses “silkworm gut” sutures, while I prefer silver wire (No. 6), secured by Aveling’s “coil and shot.” This is the simplest, cleanest, and most efficient mode of securing wire sutures yet discovered, and their removal is even more simple than their application—a matter of no small importance, whether in this or other plastic operations. I, like Mr. Baker Brown, regard “the double lateral division of the sphincter ani as an *essential* part of the operation,” while Dr. Bantock’s “experience proves that this proceeding is altogether unnecessary.” Dr. Bantock would “remove the sutures on the fourth or fifth day.” Schroeder in describing Simon’s operation, says:—“The perineal sutures are removed after three days; the vaginal and rectal stitches from the fifth to the sixth day;” while I prefer to leave the parts undisturbed for eight or nine days, there being neither discharge nor irritation produced by such delay. Increased experience supports this view. Dr. Bantock discharged his case on “the fifteenth day.” I much prefer keeping the patient *absolutely* at rest until the parts have not only healed, but have become *consolidated* as well. This cannot possibly be accomplished in less than a month, and I should prefer even a longer period if the uterus should be enlarged and heavy, as is most frequently the case. Dr. Bantock says:—“A few weeks afterwards she presented herself for examination, and her condition was most satisfactory.” One of my cases “presented herself” six months after she was sent home; “her condition was most *unsatisfactory*.” The new perineum had become stretched and attenuated by the constant pressure of a chronically enlarged uterus, hence the great importance of *time* and *rest* in such cases, not only to consolidate the new perineum, but to reduce the size and weight of the uterus. It will thus be seen that Dr. Bantock and I differ in a few minor points, but the *principle* and objects of the operation are alike in both. I am quite at one with Dr. Bantock in his views “as to the after treatment.” This cannot be too simple—

FIG. 1.

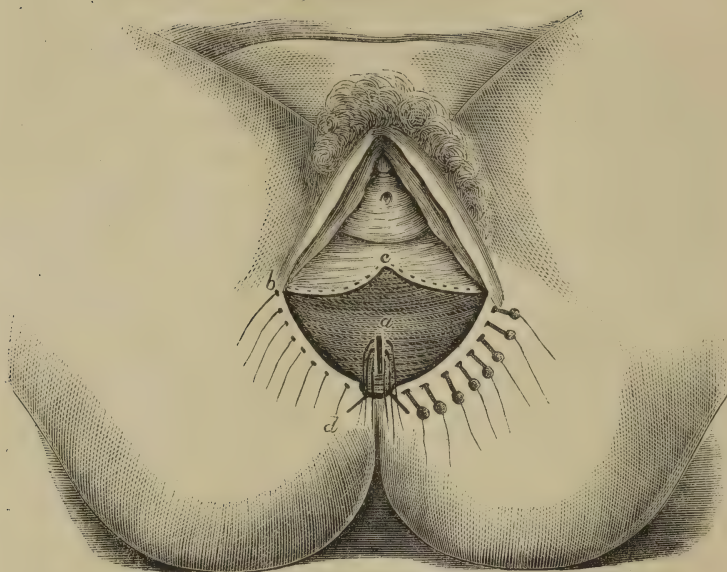


FIG. 2.

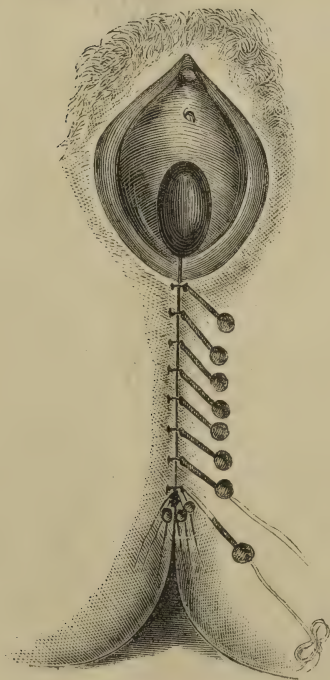
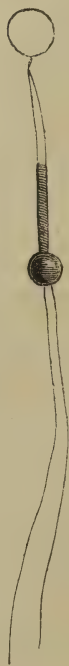


FIG 3.



good food, rest, and cleanliness are all that is necessary. Like him, I prefer opium (if called for) to "alcoholism."

If perchance I should have used in this communication any expression which might *appear* offensive to Dr. Bantock, I feel sure he will believe me when I say such has not been either by intention or desire.

#### EXPLANATION OF FIGURES.

FIG. I.—Represents complete rupture of the perineum with denuded surface. *a* shows the rent in the recto-vaginal septum with the sutures introduced, but by an error of the engraver they are represented as being introduced from within outwards, instead of from *without inwards*. *b* shows the perineal sutures introduced ready for closing, the coils and shots resting on the left buttock. *c* shows the margin of the vaginal mucous membrane, the dotted lines indicating the suture line of this membrane, the first suture being introduced at *c*, and going on till *b* is reached; it will thus be seen to what extent the vagina can be contracted—a matter of great importance in this operation; in this plate the convexity is upwards, while in Dr. Bantock's it is downwards. *d* shows the two dark lines indicating the lateral division of the sphincter ani. The three lines of union are clearly shown in this figure—viz., the rectal, vaginal, and perineal, the order in which they should be closed.

FIG. II.—Represents the completed operation; the upper six sutures are complete, the seventh shot has been compressed, but the ends of wire are not yet cut off. The eighth and last has not yet been pressed home; the coil and shot will be seen a short distance from the wound. It will thus appear that the sutures are closed from above downwards, while Dr. Bantock begins "with the one next the anus." Outside the anus will be seen three shots securing the deep sutures, closing the recto-vaginal rent; the ends of wire have not yet been cut off; by *lengthening* the coil the shot can be brought outside the anus, a process which adds greatly to the patient's comfort, and materially facilitates the removal of the suture when the proper time arrives. In order to remove them, it is only necessary to cut off the shot and withdraw the coil, when either end of the suture can be seized with the greatest ease possible, and as the wire is quite soft (No. 6), it may be withdrawn without the slightest injury to the soft parts, however delicate, or annoyance to the patient, however sensitive; the shots securing the vaginal margins are in the vagina, and cannot be seen here.

FIG. III.—Represents a silver wire suture with the ends passed through the coil and shot. In order to close it, the two ends are held between the finger and thumb of the left hand, while the shot is seized with a pair of strong forceps, made for the purpose; it is steadily pushed down with the coil in front, the tension on the wire held in the left hand being sufficient to draw the sides of the wound together, by the time the lower end of the coil has reached the wound; this being the case the shot is compressed with the forceps, the ends of the wire are cut off, and the operation is complete.

## Reports of Hospital Practice.

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### ST. BARTHOLOMEW'S HOSPITAL.

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#### *Death from Accidental Hæmorrhage before Delivery could be Effected.*

By W. H. MABERLY, M.B., C.M., Resident Obstetric Assistant.

ON February 26th, at 1 A.M., I was summoned to the assistance of one of the students attending midwifery in the out-patient practice of the hospital.

On my arrival at the house I found the patient to be a woman, aged twenty-seven, who, it was stated, had previously given birth to six children at the full time, lying in a restless state, blanched, and exhausted from loss of blood, which still continued to trickle from the vagina. I was informed that on several occasions during the last fortnight there had been slight attacks of hæmorrhage, but that late on this night, while stooping to micturate, there had been a sudden rush of blood, which more than half filled the vessel on which she was seated. There was a history of a fall down three stairs, but this appeared to have occurred between the attacks. The student said that when he reached the patient he found her in almost the same critical state, nearly pulseless, with blood flowing from the vagina. He administered ergot and brandy, plugged the vagina with a handkerchief, and sent for me.

The woman was believed to be eight months advanced in pregnancy; no labour pains had been felt. On examination I found the os uteri within easy reach of the finger, just sufficiently patent to admit it; the head presented; the liquor amnii appeared to have escaped. The margin of the os was so rigid that it defied all attempts to dilate it with the finger, and all my efforts to introduce the smallest of Barnes's bags failed. The condition of the patient was alarming. I lost no time in plugging the vagina tightly with strips of calico soaked in tr. ferri perchlor., and got her to swallow two drachms of the



liquid extract of ergot with a small quantity of brandy added. Awaiting Dr. Godson's arrival, I kept administering, at short intervals, egg, milk, and brandy mixed together. The attempts to swallow this became more and more difficult; the poor woman gradually sank, and died about an hour afterwards, before Dr. Godson reached the house. There had been no oozing of blood since the introduction of the plug.

The autopsy on the following day showed that the placenta was situated anteriorly in the middle zone of the uterus. Its lower edge reached to within about two inches of the symphysis pubis, quite out of reach of the finger when passed through the os. It was separated almost throughout its entire extent by a large blood-clot, the only portion attached being a narrow strip at its lower margin. The membranes were adherent to the uterine wall, except along a narrow track extending from the upper part of the placenta along the posterior wall, which had evidently been formed by the blood on its way to make its escape from the os uteri.

The foetus was a male, well formed, of apparently eight months development, and showed no signs of decomposition. The head presented in the second cranial position, and was entirely below the edge of the placenta.

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## *Abstracts of Societies' Proceedings.*

### OBSTETRICAL SOCIETY OF LONDON.

*Meeting, March 7th, 1877.*

CHARLES WEST, M.D., F.R.C.P., *President, in the Chair.*

The following gentlemen were elected Fellows of the Society:—Albert de Winter Baker, M.R.C.S. (Dawlish); Marshall P. Dean, M.D. (Toronto); Thomas S. Gell, M.D.; W. Wright Hardwicke, L.R.C.P. Edin. (Rotherham); Lewis James May, M.R.C.S.; Montague H. C. Palmer, M.R.C.S. (Newbury); and Arthur L. Smith, M.D. (Ottawa).

Dr. MABERLY showed two placentæ with membranes attached, in which the bloodvessels, instead of uniting on the surface of the organ,

ran for some distance along the membranes, and then united to form the umbilical cord.

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### *Revolving Needle.*

Dr. AVELING exhibited a curved needle, which by a mechanical contrivance can be made to revolve, giving the operator the power of introducing its point in one direction and bringing it out in another exactly opposite. He had invented it for cases of vesico-vaginal fistula, and more especially where the wound to be closed was situated high up or transversely. The needle has a notch near its extremity, in which a loop of the suture to be passed is placed. It is made by Messrs. Mayer and Meltzer.

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### *The Forceps in Modern Midwifery.*

Dr. EDIS read a paper on this subject. His object was more to provoke discussion upon the subject, and elicit the opinion of the Fellows, than that of defining under what circumstances the forceps might or might not be employed. During the year 1874 the Registrar-General's returns showed that there were nearly 6000 deaths from accidents of childbirth alone, many of which Dr. Edis believed were due to patients being allowed to remain too long in labour without timely assistance being rendered. Statistics bearing upon the question were given, but no definite conclusions could be drawn from them, as the high and low forceps operations were not distinguished in these calculations. The point attempted to be elucidated was, "the highest rate of frequency of application of the forceps coincident with the lowest rate of mortality to mother and child." The experience at the Rotunda Hospital, Dublin, during the last two years, threw some light upon this question. Dr. Kidd, in a paper published in the *Dublin Journal of Medical Science* for 1872, compared the practice at the Rotunda Hospital under various masters, and demonstrated that an increase in the frequency of the use of forceps diminished the maternal mortality. The proportion of tedious labours in which forceps were used were, under Clarke, 6.55 per cent.; under Collins, 6.66 per cent.; under C. Johnson, 13.13 per cent.; under Shekleton, 32.69 per cent.; under G. Johnston, 75.28 per cent. The corresponding proportion of maternal deaths after tedious labours was, under Clarke, 20.21 per cent.; under Collins, 14.76 per cent.; under C. Johnson, 8.49 per cent.; under Shekleton, 6.03 per cent.; under G. Johnston, 7.38 per cent. The saving of foetal life attained by Dr. Johnston was still more striking. The percentage of still-births in tedious labours was, under Clarke, 53.0; under Collins, 53.8; under C. Johnson, 46.3; under Shekleton, 32.6; under G. Johnston, only 9.59. Dr. Hamilton of Falkirk, again, had had two consecutive series of 800 and 700 cases without

a single still-birth, using forceps in about one case in five. But the general average of still-births was from 4 to 5 per cent.; and Dr. Cooper Rose, in his statistics brought before the Society, using forceps only once in 139 cases, had one child in 30 stillborn. On the other hand, we had the statistics of Mr. Godson, who, in his own practice, with one forceps case in 66·7, had 5·23 per cent. of the children stillborn; and in the conjoint practice with his partner, with one forceps case in 9·8, had 5·1 per cent. stillborn—a very slight difference. Dr. Braxton Hicks and Dr. Phillips had shown the fallacy of statistics according to which it appeared that the maternal death-rate after operative interference was high. His own experience was contrary to Dr. Priestley's estimate of the modern tendency as verging rather to an excess in the frequent use of forceps. Tedious labour occurred chiefly to primiparæ, and most practitioners were then inclined to delay too much. As a rule, he advised little interference with the first stage, before the os was fully dilated, unless it were clearly shown that the powers of nature were inadequate. Such cases, however, were more common than generally supposed. But it was often at the end of the first stage that the inefficiency commenced. The results of still delaying tedious hours before interference were inertia of the uterus after delivery, retention of clots, and septicæmia, or cellulitis from the effects of prolonged pressure. The skill of the operator, however, made a great difference. Ergot should not be given, unless the labour was to be rapidly completed after it. Dr. Langdon Down had concluded that tedious labour damaged the integrity of the brain, and was injurious to the future mental health, but that the use of forceps had no bad influence. In performing the operation traction should be used only to supplement the natural efforts. The high operation was always dangerous, and should not be rashly undertaken. The question of version *versus* forceps in contracted pelves was too vast to enter upon now, but Barnes and Goodell had shown that version may succeed where forceps have failed. He always himself used long curved forceps, and never failed with them when the case was suitable. The oscillatory movement was recommended by most authors, but is denounced by Dr. Matthews Duncan. Dr. Barnes was in favour of gentle leverage, and he himself always used it, and succeeded in this way when pure traction alone failed. He would formulate the following conclusions:—

1. The application of forceps at the brim was to be distinguished from the low operation, and was a serious proceeding.
2. The application of forceps was generally not required before the conclusion of the first stage.
3. If, however, the first stage was very prolonged, forceps should be applied in good time, and not as a *dernier ressort*.
4. If the uterus has fallen into a state of inertia, the application of forceps should be preferred to the use of ergot.
5. If there was evidence of the death of the fœtus by crackling of

the scalp, mobility of the bones, or other positive signs, craniotomy should be resorted to rather than forceps.

6. The use of forceps, at least as often as in one case in ten, was desirable.

7. Anæsthetics should not be given, if it could be avoided, since they predisposed to hæmorrhage.

Dr. ASHBURTON THOMPSON thought that the numerical method could not be applied to settle this question, nor could the result of personal practice. Different practices offered different percentages of forceps delivery. Occupation would give rise to such differences. The causes of difficult labour are not uniform. Forceps had recently been used much more frequently than in former times; he thought that difficult labour had not increased in proportion. He thought that every element of success depended on the individual operator, and that nothing could be expressed by means of numbers. We should be very cautious in our recommendations, since the opinion of this Society would influence practice throughout the world. Others might rashly infer, not the speaker's skill, but the facility of the operation. Very wide statistics might give results which would be curious rather than practical, since there was a great difference in different populations.

Dr. CLEVELAND said that in private practice he had obtained excellent results from the use of the forceps, and believed that in judicious hands its employment was capable of further development. If one attempt at delivery by its means failed, a second might prove successful. However valuable statistics on a large scale in a lying-in hospital may be, still in private practice we shall be mainly guided in the use of the instrument by individual experience. He mentioned several cases in which his aid had been called by brother practitioners, in some of which forceps had been already tried in vain, but in which he easily effected delivery with his instruments. One was that of a primipara who had been two or three days in labour, and he was called to perform craniotomy, but was able to extract a living child.

Dr. AVELING believed the determination of the question, how often and when the forceps should be used, must for the present be decided by personal experience, and not by statistics or the relation of individual cases. A scientific rule of practice might some day be obtained when ready methods had been found of measuring the expulsive force of the uterus and abdominal muscles, the dimensions of the foetal head and pelvis, and the resistance of the soft structures.

Dr. PLAYFAIR said that it was astonishing that the conservative instrument—the forceps—should have been looked upon with dread, while the perforator, until comparatively recent years, had been used with appalling frequency. He had deliberately advised the use of the forceps in lingering labour, and had done so after mature reflection. He had recommended a frequent use of the forceps when the head was delayed low down in the pelvis by simple *inertia uteri*, and when only a slight *vis-à-fronte* was required to supplement the



deficient *vis-à-tergo*. The high forceps operation when the head was at the brim was in an entirely different category. But when the head was low down, forceps could be applied by any one with perfect safety to the mother. The advantages of frequent resort to the forceps were, the saving of suffering to the mother, the shortening of labour, better recovery of patients, and the saving of infant life. He quoted a sentence from Dr. Galabin's recent report for twelve years of the Guy's Hospital Lying-in Charity, in which it was stated that, although some of the children might have been saved by an earlier use of forceps, a general ratio of still-births of 4·06 per cent., and one of only 2·7 per cent. in vertex presentations might be regarded as not unsatisfactory. He referred to this because he was sure that at Guy's the highest skill was employed, though he disagreed with the sparing use of forceps. But comparing this with Dr. Hamilton's 1500 cases without a single still-birth, surely this sacrifice of life ought to be prevented. In his own practice he had had only one still-birth—a syphilitic child—and he had saved at least eight lives by forceps. He would quote a case of historical interest, that of the Princess Charlotte, who was treated according to the best science of the day. Labour began on the Monday afternoon; the membranes ruptured in the evening, and pains were frequent all night. On Tuesday morning the head must have been on the perineum, since the birth of the child was expected every moment. The pains then ceased, but on Wednesday morning it was said that there still could be no question of the use of instruments. A stillborn child was delivered at 9 p.m., and the mother of course died also. If forceps had been applied on the Tuesday, the course of history would have been altered. He thought that the late President in his address had rather censured his teaching as to the frequent use of forceps. But were there any dangers associated with it which at all counterbalanced the advantages to be derived? It has been stated that ruptured perineum is more common now than formerly, and that it is due to the more frequent use of this instrument. But supposing such were the case, it would not counterbalance the saving of a single human life. On the other hand, the number of cases of vesico-vaginal fistula has diminished. He concluded by expressing his opinion that in spite of the objections made to forceps, that delivery by its means, when the head was low in the pelvic cavity, was a more conservative practice than the use of it as a last resource. The dangers which might arise from an ignorant use of forceps should not be regarded as any objection, for such an argument would apply equally to the use of the catheter for stricture, or any surgical interference whatever.

Dr. GALABIN thought that statistics carefully collected under uniform conditions would be of the highest value in deciding the question. But he considered that the statistics of Dr. Kidd, based on the number of deaths and still-births after protracted labour under different masters of the Rotunda Hospital, were unreliable, since there could be no exact criterion when a labour should be considered pro-

tracted, especially when the observers were not the same. A comparison with the earlier records of the Rotunda Hospital made the result appear different. The mortality in Dr. Johnston's mastership—namely, 21·6 per 1000—was more than half as large again as that from the foundation of the hospital in 1745 up to 1853, which was only 12·1 per 1000. In 88 cases within three years in which the forceps were applied before full dilatation of the os, simply on account of premature rupture of the membranes, there were four deaths, a mortality of no less than 46·6 per 1000. He did not argue that these deaths were necessarily due to the use of forceps, but it was at any rate not yet shown that such a use of them—in which, in more than a fourth of the cases, they were applied before full dilatation of the os—was free from risk. He did not disagree with the carefully guarded recommendations of Dr. Playfair, but thought that the practice of Dr. Johnston would be hazardous in less skilful hands. In the Guy's Hospital charity, out of 23,591 deliveries in twelve years, the forceps cases were only 5·2 per 1000; the maternal deaths only 4·4 per 1000, of which only 0·8 per 1000 occurred after protracted labour. The children stillborn were 4·06 per cent.; those stillborn with a vertex presentation 2·7 per cent., of which only about one-seventh were decomposed or premature. He had always supposed that most of these children were sacrificed on account of the rule that forceps should not be applied without sending for the Assistant Obstetric Physician, but a comparison with the neighbouring charity of St. Thomas's made this conclusion doubtful. Forceps were there used about ten times as often, but the ratio of still-births was almost exactly the same, the slight difference being in favour of Guy's. He would be glad to hear it proved that this result was exceptional, but at any rate it seemed to show that no extra risk to the mother should be incurred in the hope of saving the child, which might, after all, prove futile. The statistics of Guy's proved that a very sparing use of forceps was at least compatible with a very low maternal mortality.

Dr. FITZPATRICK thought the discussion on the use of the forceps much called for, and would be looked to with avidity by the profession generally. The forceps had been weighted with restriction and conditions, so as to materially diminish its value. Our object is in many cases opposed to nature. Nature's object is to repress feeble additions to the human stock; ours, on the contrary, is to save life and relieve suffering, and for this object the forceps is an indispensable help.

Dr. PARR remarked that, however skilful in the use of forceps a gentleman might be who related 400 and 700 consecutive cases without the loss of a single child, he certainly was very fortunate. Dr. Parr, in less than 400 cases, had four children stillborn from (two) mothers suffering from syphilis. Not one of these labours exceeded three hours in duration. In a fifth case the child was born dead, suffocated by a short cord drawn tightly round the neck. No care could exclude such cases.

Dr. DALY said that in 800 cases he had used the forceps in eighty, in fifty of which the head was in the pelvis or on the perineum, and in thirty above or in the brim. Of the 800 cases four died. Of the 80 forceps cases two died ; one was dying when he was called in of accidental hæmorrhage, the other of puerperal fever. Another of the forceps cases had pelvic cellulitis. There were ten still-births, two being forceps cases. Laceration of the perineum occurred more frequently in first cases when the forceps was not used. Craniotomy was not resorted to in any case, while during an experience of five years, while a pupil in a country district in Ireland, the forceps was not used once, but craniotomy was performed five times, and in every case with a fatal result to the mother.

Dr. POOLE thought that help might be given by other than instrumental means—viz., by well-directed external pressure. He had used the forceps much less lately than formerly. Most women had a horror of insirumental delivery, and their feelings should be consulted as much as possible.

Dr. ROPER could not see the desirability of frequent use of forceps in lingering natural labour. He had never applied forceps without ascertaining first that the natural powers were insufficient to accomplish labour with safety to mother and child. The obstruction caused by a rigid os uteri and perineum slowly and naturally gives way, and there is one condition which contra-indicates the use of the forceps—namely, the retrogression of the head on the cessation of pain. In laborious labour it is only when uterine power is exhausted that rhythmic action of the uterus ceases, and becomes one of persistent unremitting contraction, and then immediate delivery is indicated. The assertion that children are frequently born dead from delay in lingering labour, who might be saved by timely use of the forceps, is not borne out by statistics. In Dr. Hamilton's 300 successive cases without loss of a single child, the calculation excludes all children known to have been dead before forceps were applied. The number of these was 8, so that really his foetal mortality is 1 in 37. Dr. Roper thought that the application of the forceps when the os uteri was only  $1\frac{5}{8}$  inch in diameter was opposed to all propriety. His experience in the Royal Maternity gave, in 4377 cases, forceps used once in about 109 cases ; still-births, 1 in about 77 ; maternal deaths, 1 in about 463. Dr. Roper thought that the use of the forceps was not required as often as it had been stated. Labour was a natural process, and terminated favourably without interference in the large majority of cases. When Dr. Johnston, out of 113 forceps cases in his last report, lost 10 of the mothers and 11 of the children, he thought there was no foundation for the statement which he made that the 102 children saved would in all probability have been lost if left to the natural efforts.

Dr. ROGERS thought that a dictum should not go out from the Society that forceps might be used in almost every case. Labour was a natural process, and terminated without instruments in the



great majority of cases. He had himself had over 4000 cases, and used forceps in less than one per cent. of them. He had had eight or ten deaths. In Ireland, perhaps, he might have used them more frequently, for possibly the heads there were different. But he thought that the practice now recommended was over-meddlesome, and that serious mischief might result from it.

Dr. WALLACE thought that some expression of opinion by the Society as to the length of time one should wait after impaction was established before applying the forceps would be of great value. He waited two hours—rarely longer; and in 800 cases attended in the last two years he had applied forceps twenty-six times. Amongst the forceps deliveries there was one maternal death and one stillborn child.

Dr. GRAILY HEWITT believed it to be impossible to lay down a hard-and-fast rule for the employment of the forceps. For its employment education and a certain mechanical aptitude were necessary, and mechanical aptitude was absent in some instances; hence a timidity and hesitation to employ the instrument on the part of some. Others, finding the operation simple and easy, would naturally employ this method of delivery more frequently. His view as to the expediency of the employment of the forceps was practically the same as Dr. Playfair's—that is to say, considering the cases of the *low* operation. The *high* operation was undoubtedly difficult and more dangerous. This distinction of forceps cases into high and low operation was Dr. McClintock's, and the distinction was a most important one to make. He thought that the greater frequency of perineal laceration was partly due to too rapid extraction. The perineum must be allowed time to expand; nature's method should be imitated. The importance of exercising traction in a forward direction was sufficiently emphasised in the ordinary text-books.

The PRESIDENT remarked that there appeared to be but little chance that the profession in general would either receive very great assistance, or, on the other hand, be in any danger of being led astray by any great unanimity of opinion in the Society on the question which had been discussed.

## MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

*Meeting, January 17th, 1877.*

DR. GILLESPIE, *President, and afterwards* DR. KEILLER, *Vice-President, in the Chair.*

### *Five Cases of Complete Inversion of the Uterus; with Remarks on the Operation for Chronic Inversion.*

By J. MATTHEWS DUNCAN, M.D.

Some cases of partial uterine inversion have come under my observation, but the following five are all the cases of complete inversion



which I have seen. Two of them are cases of acute inversion post-partum. Of these, one was fatal, while the other proved of only temporary and trivial importance. The remaining three are cases of chronic inversion post-partum. They occurred in my practice in the Royal Infirmary. Of the three, two were cured—one by forcible taxis, and one by operation combined with taxis—while the third died after the operation of removal of the organ.

CASE I.—Mrs. M., a fine healthy young woman, had been frequently under my care for various passing ailments. She had gone through a first pregnancy and subsequent confinement without any serious alarm being excited. She was residing in Perthshire during her second pregnancy, and enjoyed good health till she reached nearly the end of the eighth calendar month, when she was unexpectedly seized, on a Sunday evening, with violent and uncontrollable sickness and vomiting, which continued, with only brief intermissions, till her death on the following Saturday. On Friday I was summoned to visit her in consultation with Dr. Gordon. On the night preceding my visit she was described as having been most alarmingly ill, incessantly vomiting; pulse 130. On the evening of Friday, when I saw her, she was cheerful; her pulse 90; vomiting had ceased during the day; had been able to retain nutritious fluids; but she was very weak and exhausted, and in great dread of the returning sickness and vomiting. The pain of the latter efforts she described as very great, and as if her hips were being torn off. Ordinary anti-emetic treatment had been diligently pursued, and was continued. The bowels, which were habitually constipated, had just been freely moved by turpentine, and many scybala discharged. It was resolved to induce labour, and I inserted into the cervix uteri a moderate-sized sponge-tent. She passed the night without great disturbance by vomiting; and as labour showed no signs, I departed for Edinburgh by an early train. When Dr. Gordon paid his visit, he withdrew the sponge-tent, and finding no indications of active labour, he ruptured the membranes. Labour now began and progressed rapidly, the child being born alive about 10 A.M. The placenta was spontaneously expelled almost immediately after the child, and the uterus became well contracted. She had much sickness during the labour, and delivery did not put a stop to it. About five minutes after delivery, flooding commenced, while the uterus was in an otherwise ordinary condition. But soon it became inverted; the flooding continued profusely, and she died about half an hour after the birth of the child.

When the alarming symptoms began after delivery, I was again telegraphed for, but of course did not arrive till some hours after death. Before I left the house, a post-mortem examination of the abdomen was made, by the considerate permission of the husband.

The uterus was within the vagina. When grasped by the hand, it felt as if of about the size of a small foetal head. There was no, or very little, constriction at the base of the tumour formed by the internal

os uteri. The cervix was elongated, thin, soft, and relaxed, not inverted, encircling the upper part or base of the uterine tumour. On laying open the abdomen, the organs were observed to be ensanguine, but otherwise healthy. Near the brim of the pelvis could be seen the opening of the peritoneal cavity of the inverted uterus, with the ovaries, tubes, and round ligaments arranged in it and upon it. The peritoneum was entire and apparently uninjured. In the right ovary was a thin-walled cyst of the size of a walnut.

I now made some experiments on the inversion. It was easy to pull down the uterus so as to make it procident. This produced inversion of the cervix. It was easy to replace the uterus in the vagina, and this produced replacement of the relaxed cervix. It was plain that the inverted uterus was, for every important reason, an inversion involving only the body of the organ. When replacement of the inverted uterine body was attempted, difficulty was experienced. The vagina and cervix uteri became elongated, under the replacing pressure, to a remarkable extent, and the hand and arm were buried deep in the vagina before replacement was commenced. It was effected with considerable difficulty. No disease was observed in the uterus.

Regarding this case a complete satisfactory history was obtained. The inversion was produced while the parts were under no handling or force from without the body. It appears to me to have been one of the kind called spontaneous passive inversion. Bleeding probably first occurred, distending the uterine cavity; then came vomiting, which was probably the source of the injurious pressure which inverted the organ, and simultaneously expelled its contained accumulation of blood-clot. There was nothing in the symptoms or post-mortem appearances to indicate spasm of any part of the uterus, nor to indicate paralysis of a part only of the uterine body.

I find, in my notes of this case taken at the time, the remark that it was evidently best to replace by pressure on the middle of fundus, reinverting that part first.\*

CASE II.—Mrs. R., a fine healthy young woman, came to town for her confinement in November, 1865. She had already had two healthy children at the full time, the last born about two years before her present lying-in. Pains commenced about 3 A.M., and a well-developed female child was born at 7.10 A.M. There was no hæmorrhage immediately or soon after the birth of the child.

The completion of the third stage was waited for, and the uterus kneaded, but the placenta did not show an edge at the os uteri. The cord was gently pulled, to ascertain if the placenta was free and removable, but it was found fixed. Presently, and now forty-five minutes after delivery, the patient complained of intense desire to make water, and of no other pain. A careful examination was imme-

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\* This is not to be regarded as anything more than the expression of an opinion founded on an individual observation. On this matter, see M'Clintock, *Diseases of Women*, p. 79.

diately made. The uterus had disappeared from the hypogastrium, and only a small hard part could be felt low down on the right side. The finger, exploring per vaginam, discovered a broad flat surface, in dimensions like the top of a foetal head. It was firm, and constituted by the foetal surface of the placenta, the cord being inserted near its centre. Before I had had time sufficiently to examine, the firmness of this projecting mass led me to suspect it was a descending tumour ; but this idea was soon dispelled, and the inverted uterus fully made out. The cervix was not inverted, and was high up ; its external os not readily discovered, and considerably above the level of the fundus uteri.

The uterus was easily reinverted, and the everywhere adherent placenta artificially separated. A little bleeding followed the separation, but was soon checked by only moderate uterine contraction, and it did not recur.

Intense rigors followed complete delivery. She made an uninterrupted good recovery.

This case appears to me to be an example of artificial active uterine inversion. Pulling at the cord commenced the inversion of the paralysed placental insertion. That this part was paralysed, or very inactive, is proved by the continued attachment of the healthy placenta. Then the body of the uterus, exclusive of the placental site, contracted and seized the central portion now projecting inwards, and expelled it, completing the inversion, and bringing on the feeling of strangury. In this case, replacement was so easily effected that no lesson could be derived from it as to the best method of proceeding.

CASE III.—Mrs. M., aged twenty-four, admitted into the Royal Infirmary, October, 1871, has been married for two years, and has had one child about a year ago. She is very weak, pale, and anæmic. Complains of continuous loss of blood per vaginam, increased at what she regards as the monthly periods and by going about.

She had enjoyed good health till the birth of her only child. After this event, red discharge did not cease till February, and then it continued absent for three months. When it reappeared in May, she consulted a doctor, who told her that her womb was displaced, and attempted to replace it. She had been attended by a careful medical man, but only now was the nature of her case discovered. Previously it had not even been suspected.

The uterus was small, pear-shaped, deep red, easily made to bleed, not very sensitive to touch. It was entirely inverted, or nearly so, there being only a narrow rim of the lower part of the cervix in its natural position ; but the entire cervix was easily replaced.

On 30th October, reduction by forcible taxis was attempted in vain by myself and Dr. T. Keith. The patient was under the influence of ether, and the efforts at replacement were continued for an hour and a half. After the operation the patient suffered greatly from feverishness, derangement of the digestive organs, and rheumatoid pains in all parts of her body.



In December I used continuous pressure on the fundus with counter-pressure on the hypogastrium. The pressure was by a cup-shaped pessary attached to one limb of a Santorini tourniquet ; while the pad on the other limb effected counter-pressure. To insure proper adaptation, the instrument required constant watching by an attendant. On the 1st December, after four hours' use of this instrument, I attempted for half an hour to replace the uterus ; but in vain. On the 21st December, after continuous pressure by the instrument had been kept up by Drs. Hardie and Imlach for twenty-four hours, another attempt at replacement was made, in my unavoidable absence, by Dr. T. Keith. On removing the instrument, he found that it had only flattened the fundus. The patient was put under the influence of ether for an hour and three-quarters, and during that time efforts at replacement were continued, and at last crowned by success. Intense rigors, with prostration, came on at once, and she was very ill for a few days ; but at no time did her condition excite serious alarm.

There was almost no discharge till the 22nd January, when menstruation took place, and was, she believed, natural in all respects. Examination now discovered a patulous condition of the os uteri, but on the whole a healthy condition of the pelvic viscera. Especially, there were no adhesions or other source of fixation of the uterus, and its cavity was of normal length.

She was dismissed on 29th January.

CASE IV.—Mrs. E., aged twenty-four, admitted into the Royal Infirmary, 28th April, 1876, is the mother of two children. Her last child was born five months before her admission. The delivery was natural, so far as she knows. Only she had a flooding an hour after it, and then the placenta was removed. She continued, she says, to lose blood for nine weeks, when some medicine prescribed by Dr. M'Indoe arrested this flow. Ten weeks ago she had rigors and loss of blood ; and she then weaned her babe. Since then she has twice menstruated profusely, and has had occasional bleedings at other times. The condition of the uterus had only recently been suspected and made out.

The inverted uterus is found occupying the upper part of the vagina. It is oviform, and about the size of a hen's egg, somewhat tender, smooth and deep red in colour. Its mucus is slightly alkaline, and its epithelium is rounded, and somewhat tessellated. The neck of the tumour is a little smaller than the body, and corresponds to the internal os uteri ; but by pulling on the tumour, the whole cervix can be inverted. After this is done, the cervical portion is easily replaced.

On 1st May, the patient being under the influence of chloroform, a strenuous attempt was made for about an hour to replace the organ by forcible taxis, but in vain. The organ could be forced within the cervix, the latter being elongated, but no farther. Besides the hand, a repositor, consisting of a stick with a cuplike end, was used with



apparent advantage. After this operation she was very ill for two days with pain and sickness and vomiting. The latter was attributed to the prolonged use of chloroform ; and in subsequent operations ether was substituted for it, with the desired result of avoiding the extreme prostration and vomiting.

On 23rd May, an hour was devoted to most vigorous forcible taxis, and on 30th May, an hour and a half ; but in vain. The body of the uterus could only be pushed within the cervix. On 1st July the efforts were repeated, and continued for three and a half hours. Pressure was for the most part effected by the repositor, but occasionally the hand was used by myself, Drs. T. Keith, Stephenson, Underhill, and Cotterill, the whole power of the arms being exerted on pressure and counter-pressure.

On 2nd August, in the presence of several foreigners, I incised the uterus, and effected a partial reposition, which subsequently became spontaneously complete.

The uterus was seized by the fingers and pulled down. The cervix became completely inverted and did not descend to the vulva, but came very near it. On the anterior surface of the organ, near the internal os uteri, a vessel, apparently about the size of a small surgical probe, spouted gently, rising like a large pin's head. The uterus was now incised on its anterior surface by bistoury, the incision extending from just below the internal os uteri to a little above the middle of the body of the uterus, and being carried as deep as could be safely done without injuring the peritoneum ; say, nearly a quarter of an inch. When the incision was held open, blood flowed freely from several openings, and somewhat jet-like. Now a similar incision was made in the posterior wall of the uterus. The organ was then treated in the usual way by forcible taxis with the hand. The body was first pushed within the cervix ; but now, further pressure further replaced it, but with sensible free laceration of tissue, no doubt beginning at the wound or wounds. The replacement was effected as far as the incisions extended, but no farther. The peritoneum did not give way so far as I could judge, and the subsequent history of the case renders this almost quite certain. The fundus uteri could be felt as a shallow cup whose bottom the finger—covered, of course, by intervening textures—could reach from above. But its shape and its newly-acquired extreme freedom of movement, in consequence of the lacerations, rendered it very difficult of management with a view to reposition. Desperate attempts were made, but in vain. To this difficulty the only moderate dilatation of the cervix uteri partly contributed.

After this operation the woman was not nearly so ill as after the first attempt at replacement under chloroform. Vaginal lotions of carbolic water (1 to 50) were used very gently twice daily. There was no noteworthy bleeding after the operation, and during her recovery there was only scanty purulent discharge.

On 11th August the inverted fundus could still be felt within the

cervix. The next examination was made many days afterwards, and the organ was found all right. On the 9th of September she left the hospital. In November she returned to show herself, and was found very well. At no time were there any uterine adhesions or other source of fixation of the womb. The uterus was mobile, and of ordinary shape, admitting the probe two and a half inches.

CASE V.—M. A. R., aged thirty-five, unmarried, mother of one child born fourteen years ago, was admitted to the Royal Infirmary in July, 1876. She says she had an easy confinement, that the after-birth came away of itself, and that when her medical attendant left her she felt well. Subsequently, however, on the same day, she suffered severely from vomiting, pains, and inability to pass water. Her urine was not drawn off till two days had elapsed, and the catheter had to be regularly used for this purpose for three weeks; and during all this time she had great losses of blood. For eleven years subsequently she had either losses of blood or a white discharge. During the last three years menstruation has been more regular, but she has felt exhausted and unfit for her work as a domestic servant. Her disease was diagnosed soon after her confinement, and several attempts have been made to cure her. She is weak, pale, and anæmic.

The condition of the uterus was found to be exactly as in the former case (IV.) in every respect; only, when pulled down by the hand, it descended further—that is, beyond the vulva; and not only the neck of the organ, but the upper part of the vagina became inverted. Several energetic attempts to replace by forcible taxis were made in vain, the hands being used alone for pressure and counter-pressure, or the repositor taking the place of the internal hand. From the 8th August to the 18th September the taxis was well applied by Dr. Church every day for from twenty minutes to half an hour, but without any change. The body of the uterus is easily, after a time, returned within the cervix, but no part of the body becomes replaced. On 19th September the patient was anæsthetised, and I incised the uterus as in the former case, continuing the incisions, however, higher up or to within half an inch of the upper margin of the fundus. Most powerful efforts were immediately thereafter used to replace by forcible taxis, but in vain. From the operation she subsequently suffered little, making a good recovery.

On 19th October I proceeded to remove the organ. After pulling it by the volsella down to the vulva, I transfixed the cervix close to the internal os uteri by the ordinary instrument for hæmorrhoids carrying a loop of strong twine. The cervix was now ligatured on each side with all the tightness my hands could produce. Then I cut off the uterus by bistoury about a quarter of an inch above the seat of ligature. Previous to cutting off, the cervix was seized by the volsella below the ligature, to prevent premature retraction. The surface of the incision was whitish, like a section of cartilage, and several vessels bled freely. The hæmorrhage was, however, easily

commanded by compression by the volsella. The cut surface was cauterised by a red-hot steel cautery, and the tendency to bleeding arrested. In the middle of the section the Fallopian tubes could be seen and pulled out for a little, not being fixed by the ligatures. The cervix was now returned with the volsella affixed. The woman was made comfortable. The volsella was removed in about two hours after the operation, and the woman placed in bed at 3 P.M. There was no bleeding. Severe sickness and retching, which produced pain in the lower part of the belly, came on immediately after the operation and lasted for two days. At 8 P.M., pulse 100; temperature 98°. Urine drawn off.

*20th October.*—I removed the ligatures which had slipped over the stump of cervix. Noon: pulse 108; temp. 97·8°. Has very little pain or tenderness. Passes her urine.

*21st October.*—Has had a good night. Abdominal pain less. Noon: pulse 104; temp. 100·2°.

*22nd October.*—Patient's conditional favourable. Temp. 99·8°.

*23rd October.*—Patient well in the morning. About 9 A.M.—Temp. 99°. Soon after this a rigor, which was duly treated by Dr. Church. 11 A.M.—Pulse 134; temp. 100°. At 9 P.M.—Pulse 100; temp. 99·8°; resp. 18. After this she appeared to get on very well till

*28th October.*—Morning: Pulse 100; temp. 99·8°. Pain in left groin. Some tenderness of abdomen. Considerable discharge of pus per vaginam, which was, as on one previous occasion, washed out with tepid carbolic lotion. Evening: Pulse 118; temp. 102·8°. From this time she became progressively worse, and died on the 29th.

This case was probably one of spontaneous active uterine inversion. The fatal event I am disposed to attribute to an attack of severe and general peritonitis, connected with the effusion of blood between the bladder and rectum, which had undergone decomposition. This effusion of blood appears to me to have taken place, probably soon after the operation, from the Fallopian tubes which had become spontaneously retracted from the embrace of the ligature. Had I foreseen this casualty I would have fixed the cut ends of the tubes to the edge of the wounded cervix. I may add that the cervix had spontaneously become replaced, except a small tongue of tissue mentioned in the account of the autopsy.

*Autopsy by Dr. Wyllie, 31st October.*—The body well nourished. The peritoneal sac contained about one pint of a dirty grey purulent fluid, and the bowels were coated with recent lymph, by which some of the intestinal folds were matted together. Within the pelvis, the fold of Douglass was filled with a tarry blood to the amount of three ounces. This blood was limited to the pelvis by the adhesions of the folds of the ileum, the sigmoid flexure, and the great omentum, to each other and to the upper part of the bladder, rectum, and the wall of the pelvis at its brim. Within the cavity of the pelvis, the space containing the blood was lined with a layer of tough laminated blood-clot,

about half an inch in thickness. This layer covered the posterior surface of bladder, anterior surface of rectum, the upper part of the vagina, and remains of the uterus. On scooping out from the pelvis the whole of the viscera, and removing them for examination, the following was found to be the condition of the parts :—

1. The body of the uterus was entirely absent, having been removed by operation at its point of junction with the cervix. 2. The cervix was about three-quarters of an inch in length, and the external os was quite patulous, admitting the finger easily. Into the upper part of the cervix there projected downwards from the posterior wall a small leaf-like remnant of the uterus, about three-quarters of an inch in diameter and a sixth of an inch in thickness. The upper extremity of the cervix was covered over and shut off from the abdominal cavity by the layer of blood-clot above described ; but when this was removed, the finger could be passed from the vagina through the cervix into the peritoneal sac.

The liver weighed 3 lbs. 15 oz., and was natural. The spleen was large, weighing 1 lb. 2 oz. ; its substance was firm.

The kidneys weighed 7 and 6½ oz. respectively. They were exceedingly anæmic, and rather œdematous. They contained a number of small serous cysts.

The heart was natural, except that its chambers and auriculo-ventricular orifices were slightly dilated.

The lungs were anæmic, but otherwise natural.

Although I consider myself very fortunate in having met with so many cases of complete uterine inversion, there is no subject for whose satisfactory study I desiderate more intensely farther experience. This leads me both to bring my concluding remarks within narrow limits, and to speak on some points with diffidence.

On one point I feel quite assured—namely, that the uterine cervix has no important part to play in this disease—that complete inversion of the uterus is a condition of the body of the uterus, and that the condition of the cervix is of trivial import. It may be inverted, or it may not. If it is inverted, it is easily replaced, and its replacement does not facilitate the replacement of the body of the organ. This statement is fully illustrated and confirmed by the cases I have just recorded. It is also illustrated by the most ordinary experience in confinements ; for in them, inversion of the cervix\* is a very frequent occurrence, and one to which I know no case or circumstance lending importance. In most writings on inversion,† even the os uteri (externum) is considered as an injurious constrictor. This I hold to be an error, and I indeed exclude the whole cervix from having any place of importance in the disease.

\* *Contributions to the Mechanism of Natural and Morbid Parturition.* By the Author, p. 285.

† See Barnes's *Clinical History of the Medical and Surgical Diseases of Women*, p. 734.



It is well known that mistakes in the diagnosis of this displacement, even when uncomplicated, are not rare, and sometimes very disastrous in their result. But there is in simple cases no difficulty about it, and errors arise from hastiness, or from not suspecting the condition.

The treatment of the disease is in a most unsettled state, which is the natural result of its difficulty and of its rarity. The principal methods of replacement may be included in three divisions :—first, that by long-continued gentle pressure ; second, that by forcible taxis ; and, third, that by operation. Extirpation is an evasion of the difficulty.

So many cases have been and continue to be recorded of success by long-continued gentle pressure, that strong expectations may be justly entertained of a regular treatment on this principle being duly formulated, at least as applicable to a large proportion of the cases that occur. No doubt, cases of spontaneous reposition are illustrations of this principle of treatment. It is my opinion that, in these spontaneous cases, the chief agent has been negative abdominal pressure, or great retentive power ; and it will probably be found that the successful cases of artificial reposition on this principle are cases where there is already negative abdominal pressure, requiring only little assistance from the artificial pressure supplied by the practitioner. It is for the medical physicist to make out whether or not he can produce this favourable condition of the abdomen when it is not naturally present. Even now we can produce it by certain positions of the body—such as on the knees and face ;\* and it is yet to be made out what curative results may be expected from it in cases of inversion and the like, such as ordinary hernia. Artificial pressure is applied, or proposed to be applied, by the *colpeurynter*, and by various forms of pessaries. It appears to me quite certain that pressure, if duly and long enough applied, will replace the uterus ; but any one who has seen cases will need no aid in recognising the difficulty of applying pressure duly and long enough. The reposition of the persistently inverted fundus in Case IV. is probably an illustration of this principle of treatment, the fundus having become replaced by the pressure of the healing and contracting body of the organ.

Many cases have been reduced by forcible taxis. This method succeeded in Case III. Having regard to the frequent failures of this method under the most energetic and persevering attempts, and having tried in vain to imitate it experimentally in the amputated uterus of Case V., I am constrained meantime to believe that, when it succeeds, the uterine tissue is torn, much as it was cut in my cases treated by operation. My Case IV. strikingly illustrates and confirms this view, for the persistent inversion of the fundus, after the replacement of the body, was no doubt due to the circumstance that

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\* *Researches in Obstetrics.* By the Author, p. 430.

the incisions were not carried high enough, and that tearing beyond the incisions was not produced by the replacing efforts of the practitioner.

In conclusion, I have only a few remarks to make on this operation. It is evident, from what I have already said, that, not regarding the cervix as the source of difficulty, I do not expect direct advantage from cutting it. Incisions of it have been repeatedly proposed and performed, and it is my opinion that they may in some cases be useful, but only indirectly. They may permit easier access to the hand manipulating the really inverted part, the body of the organ; or they may facilitate the laceration of the body on the well-known principle that it is easier to continue a tear than to commence it. In my operations the body of the uterus was incised. In Case IV. the incisions were evidently enlarged by laceration while the organ was being replaced.\* In Case V., which was of fourteen years' standing, the incised organ could not be induced to give way and tear. It is very probable that, in the successful cases, the peritoneum escapes laceration.

The PRESIDENT said the Society was much indebted to Dr. Duncan for his interesting communication. The accident was one dangerous to life, and it was not yet quite decided what the best method of treatment was. The subject was one more suitable for those who attended on ladies; but it commended itself to surgeons too, as being partially a surgical operation. His own view was that the more recent the accident the more easily would the inverted uterus be replaced, just as in the case of prolapsus of the bowel. If, however, the uterus had been inverted for fourteen years, it hardly could be expected that it was possible to return it, as one of Dr. Duncan's cases clearly showed.

Dr. KEILLER, who now took the chair, expressed the pleasure he had in acting as Vice-president, and was only sorry that he was unable to attend the meetings oftener. He, however, was fortunate in hearing Dr. Duncan's paper. As an obstetrician he looked on it as valuable because of the extreme rarity of such cases; and Dr. Duncan was right in considering himself fortunate, or perhaps unfortunate, in seeing so many cases in his own practice and that of others. So rare was the accident that many obstetricians of long experience had never seen it. In 200,000 cases at the Dublin Hospital there had been only one instance. In the Obstetrical Society, when the subject was brought before it, Sir J. Simpson, in reply to a member who said he had seen many such, stated that he had never seen a case of acute inversion. Dr. Moir had seen one or two. He himself, a long time ago, had seen one case of acute inversion of the uterus with the placenta attached. The doubt was whether he should remove the placenta and then reinvert. He removed the placenta, and then reinverted the uterus. Of his other cases, one was seen with the late

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\* See some pertinent remarks by M'Clintock, *Diseases of Women*, p. 94.

Dr. Dumbreck. It was a first delivery, and the woman had symptoms Dr. Dumbreck did not understand. He was called in two days after, and found the inverted uterus in the vagina, and away from the pubes. As he had no chloroform he went home for it, calling for Sir J. Simpson on his way. Simpson, however, was not at home. He with difficulty reinverted the uterus, adopting the plan of passing the fingers of one hand into the cupshaped depression above the pubes, and with the other pushing up from below. It took two hours to do it, but he succeeded at last, and the woman did well. His next case was in St. Andrews, where Dr. Archibald had delivered the woman some time before, but as some hæmorrhage ensued, she kept her bed. When called in consultation he found the uterus inverted, and as it had a fibroid tumour, the inversion was chronic. He pulled the tumour out, and removed it, with little bleeding, by means of the *écraseur*. He then tried to reinvert the uterus, but failed, although tremendous force was used. He went back again with a special instrument, but again failed. The patient then came to Edinburgh, and was reported to the Obstetrical Society. He endeavoured to reinvert it, trying for days, and even weeks, with the caoutchouc bag, but utterly failed. The surface of the uterus could in this case be freely handled without causing any pain, only a little bleeding. Several operations were now proposed. Sir J. Simpson proposed to incise the body, but this was not done for fear of peritonitis. It was also proposed to incise the cervix. The patient ultimately left for Dundee, and remained there, still ill from the hæmorrhage. She was alive yet, but with the uterus inverted. He had lately learned from her husband that she was now strong, and could walk about. Menstruation had ceased, and the uterus was atrophying. No operation, therefore, seems needed. Another case happened at Stockton-on-Tees, and was interesting, as it caused a legal action on the part of the woman for the loss of her uterus. It occurred in the practice of Dr. Watson there, who delivered the woman, and, according to her friends, did not use care enough. After delivery, Dr. Watson found the uterus was inverted, retention of urine being one of the symptoms. He tried to reinvert it, and thought he had done so. The patient, however, was still uncomfortable, and therefore another surgeon was called in. He found the uterus still in the vagina, but failed to return it. He therefore got a third practitioner, who, in order to stop the hæmorrhage, removed the uterus by the *écraseur*. The woman recovered, and then brought an action of damages for 1000*l.* against Dr. Watson for the loss of her uterus. Dr. Watson accordingly asked him to give evidence. The trial lasted for two days, and he took up the apparatus used at the Maternity Hospital. In the witness-box he mentioned chronic cases where reinversion had been successful, and showed the caoutchouc bag in order to prove to the jury that the uterus ought not to have been excised. The result was that the poor girl lost her case and had to pay costs, Dr. Watson getting off free. Dr. Duncan's paper was a



very important one, and with his views as to the causes of inversion he agreed. The cervix had little to do with it, but traction on the wall was important. He only wished now to mention an experiment he had performed. It was in a case of placenta prævia, where one of his students removed the placenta and tried to turn. As the woman was evidently dying, he extracted the child, and, with his one hand in the uterus, tried to invert it by pressure from above on the fundus. He utterly failed, although the uterus was not contracting. The common opinion, therefore, that inversion was caused by pulling on the cord, was wrong.

Dr. CHARLES BELL regretted that he had been prevented from hearing the commencement of Dr. Duncan's paper. Two points struck him, after coming into the room, on which he should like to have some information—the one was the size of the uterus which had been excised; the other was that Dr. Duncan had said the cervix had nothing to do with inversion. He, however, believed if it had nothing to do with the inversion, it had a great deal to do with preventing its reduction, by acting as the stricture in a strangulated hernia does. He believed that the os uteri generally contracts immediately after delivery, as shown by the difficulty in removing the membranes when the placenta is being extracted. They might indeed be left in the uterus, unless great care was used in removing them, because the os frequently contracts round them. This was a beneficial arrangement of Providence to prevent inversion, especially in tedious cases where the uterus gets exhausted, and the cervix remains dilated. When the child is born, the latter contracts, and therefore the cervix has a good deal to do with preventing the reduction. The necessity of incision of the uterus proved that this was one great cause of the difficulty in reducing the inversion. This action of the os and cervix is further illustrated in his paper on hour-glass contraction, of which it is generally the cause.

Dr. ANGUS MACDONALD, in common with the members who had spoken, wished to express the pleasure he had in listening to a paper on a subject so interesting to the gynæcological practitioner. It was a rare lesion, and in proof of that he might mention that he had never in his experience in the New Town Dispensary seen acute inversion. This showed, firstly, that it was rare; and secondly, that the young members of their profession who attended dispensary cases, not immaculate practitioners, do not drag excessively on the cord. Indeed, the plague in his life was being summoned to remove lazy placenta, which he almost invariably found lying half out and half in the uterus. He had had the advantage of seeing one of Dr. Duncan's cases, and had under his care at the present time a case of chronic inversion which had lasted for fifteen months. He could bear out to the full the points emphasised by Dr. Duncan, and apparently not agreed to by Dr. Charles Bell—viz., that the cervix uteri had little to do with inversion. It was fully dilated in his case, the cervix being fully traversable by the examining finger, the constriction being at the



inner os. As to the treatment, he could also bear out the remarks on the difficulty of reposition. He had been unsuccessful in an attempt to reduce by taxis, although he had tried it with great force for an hour, the patient being deeply anæsthetised. He had employed Späth's method of gradual dilatation by gutta-percha dilators. The difficulties, however, were very great, not so much on account of the amount of irritation and bleeding occasioned—for these, though considerable, could be got over—as from the impossibility of maintaining continuous tension in the elastic ball while in the vagina. It either lost its tenseness by continuous distension, leading to its tissues giving way and bulging at an unsupported point, or it was forced out of the vagina. He felt sure that all interested in obstetrics would thank Dr. Duncan for his extremely rare cases.

Dr. M. DUNCAN had only to thank the members for the way in which they had received his paper. The remarks of the President and those of Dr. Macdonald needed no reply, but his thanks, as they agreed with him. Dr. Charles Bell's criticisms were founded on the assumed physiological fact that the os contracts immediately after the child is born. As this is not the case, the whole superstructure reared on it falls to the ground.

## Obstetric Summary.

### *The Local Treatment of Puerperal Fever.*

In the *Sammlung Klinische Vorträge*, No. 107, appears an article by Dr. Fritsch, of Halle, on the nature and the local treatment of puerperal fever. The author accepts the doctrine, almost universally held in Germany, that there is no such thing as puerperal fever in the old sense of a specific disease, but that the febrile diseases of puerperal women are forms of traumatic fever due to septic infection, but acquiring a special character on account of the peculiarities of the puerperal state. These peculiarities he regards as consisting not so much in any special state of the blood or system in general, as in the local condition of the genital organs. He points out that in the congestion and dilatation of vessels normally existing several of the elements which make up the definition of inflammation are already present, and the tissues involved are ready to undergo retrogressive changes, which may be readily converted into abnormal processes. By the absence of these conditions is explained the immunity often enjoyed by the patient in cases of missed labour, even under severe operative interference, and when the retained foetus is much decomposed. So too is explained the less liability to septicæmia in early abortions.

Heterogenetic poison may either be absorbed by some abraded surface, and produce direct infection, or may act by producing

decomposition in the lochia. In the former manner are to be explained the cases in which the symptoms of puerperal fever have become manifest, even before the delivery of the patient. Even without the conveyance of any poison from without, if clots are retained within the vagina, and if air has obtained access to it, as is very frequently the case, all the required conditions are present for decomposition and consequent septic infection. Although non-absorbing granulations may have formed before the production of the septic material, yet it is easy for some slight fresh abrasion to be produced in them during defecation, or any other effort.

The place at which absorption most commonly takes place the author considers to be the cervix, and at autopsies he has always found greater evidence of inflammation in the cervix than in the body of the uterus. Lesions of the vagina also frequently give occasion for absorption, as is shown by the greater frequency of septicæmia after rupture of the perineum. The surface of the uterus itself rarely affords opportunity for lymphatic absorption, but septic material may find its way into the veins at the placental site, or the clots formed at their mouths may decompose. Thrombosis then results, followed by embolism, and the form of disease then produced is pyæmia, characterised by deposit in distant parts. The preponderance of peritonitis in the symptoms is readily understood when it is remembered that the peritoneal cavity may be regarded as a great lymph space, into which the lymphatic vessels freely open. When the inflammation has once been set up, it may be no longer possible to detect any lesion in the lymphatic vessels which have conveyed it, just as may be the case when cadaveric poison has been absorbed by a scratch on the finger, and has set up acute inflammation and abscess in the axillary glands. Peritonitis may also arise in a somewhat different manner from direct extension of inflammation by continuity from the uterus and perimetrial cellular tissue.

As prophylactic measures, the author enjoins the following precautions:—A bottle of strong liquid carbolic acid is always to be carried, and a dilute solution made as required. Before every examination, the hands, after ordinary washing, are to be disinfected by the carbolic acid, aided by the use of a nail-brush. At the onset of labour the woman is to be placed in a hip-bath, and thoroughly washed with soap, after which the vagina is to be syringed, and the vulva cleansed with carbolic acid. This syringing is to be repeated if labour is of long duration, and also before and after the performance of any operation. Fehling, of Leipzig, has tried the plan of managing normal parturition under the carbolic spray, but has given up the experiment, because it appeared to predispose to post-partum hæmorrhage. The author recommends, however, that it should be used in lying-in hospitals at any operation whenever puerperal fever is endemic. After delivery, he enjoins that in all cases the vagina is to be syringed with carbolic acid, at least twice a day, and the vulva carefully cleansed. When any febrile symptoms arise, and in all cases in

which the fœtus was decomposed, intra-uterine injections are to be used. The author prescribes that at least a litre of the carbolic solution is to be employed. He uses the irrigator, to which is adapted, for introduction into the uterus, a silver tube 30 cm. (11·8 inches) in length, and open at the extremity. Intra-uterine injection is to be specially carried out in all cases in which it has been found necessary to inject perchloride of iron into the uterus to arrest hæmorrhage. Failing this precaution, the author has repeatedly seen septicæmia arise from decomposition of the firm clots produced by the iron. In all cases digital examinations are to be made, that no clots may be allowed to remain behind in the vaginal cul-de-sac. In eleven severe cases of puerperal fever the author has observed the antiseptic injections to have a rapid effect upon the pulse and temperature, and at the same time the various lesions in the cervix or vagina have assumed a healthy appearance, and have rapidly healed. He has found them equally successful for the prevention and cure of the milder cases of pelvic cellulitis. When, however, a case is seen only at a late stage, when the lochia have ceased, and no smell is found on the examining finger, he regards the local treatment as no longer of any service.

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#### *The Treatment of Eclampsia.*

In the *Archives de Tocologies* for December, 1876, Dr. Leriche, of Maçon, relates a case of puerperal eclampsia in which an early operative intervention had a temporarily good effect, but did not avert a fatal result. The patient was a primipara, aged twenty, eight months pregnant. When she came under observation, she had been insensible for nine hours, and the eclamptic attacks were recurring almost without intermission. The lower limbs, the vulva, and hypogastrium were enormously oedematous, and the patient had a very anæmic appearance. The uterus was much anteverted, the cervix very high up, and difficult to reach; the external os admitted the finger, but it could not be passed through the internal os. The patient was placed under chloroform, and some remission in the frequency and the intensity of the attacks was thus procured. The author then pushed the fundus backward, and succeeded in hooking his index finger into the cervix, and by considerable effort bringing down the cervix into the line of the vagina. It was then possible, with some force, to pass the finger through the internal os into the uterine cavity. Continuous traction was kept up upon the anterior lip of the os, and gradually two and three fingers were introduced, and eventually, after a fatiguing expenditure of muscular power, the os was sufficiently dilated to admit the whole hand. Podalic version was then performed, and the fœtus extracted. The placenta was not expelled till after the lapse of an hour; and rather considerable hæmorrhage took place. Immediately after the birth of the child, the eclamptic attacks were sus-



pendent, and did not recur for two hours. The stertorous breathing ceased, but the patient did not become conscious. At the end of the two hours a slight attack occurred, a second an hour later, a third after another quarter of an hour, and soon the fits again became almost continuous. Five hours after delivery Dr. Leriche left his patient, regarding her condition as hopeless. He afterwards heard that she had died on the fifth day after delivery, without having ever recovered consciousness.

In the same number are recorded two other cases of eclampsia. The first is that of a woman, aged thirty-four, pregnant for the third time, who had reached a little beyond the seventh month of gestation. On the night of August 25th she was suddenly seized with severe headache and epigastric pain, accompanied by impaired vision and vomiting. Soon after eclamptic attacks began to occur at short intervals, and she had fifteen during the morning of the 26th. A practitioner being summoned, immediately bled her to 500 grammes. The same evening she was admitted into the hospital. She was then in a state of deep coma; there was general œdema, and the urine was highly albuminous. The pulse was still firm. A second venesection of 500 grammes was performed. The intervals between the fits then became gradually longer, but she had five more before the evening of the 27th. On the morning of the 28th consciousness returned, but the death of the foetus was ascertained. It had probably occurred on the preceding day. On the 29th and 30th the proportion of albumen was less, and the patient better. On the 31st, after prodromata resembling those before felt, two more fits occurred. A draught containing 4 grammes of chloral was then given. On September 1st the patient felt well, and the albuminuria had disappeared. On the morning of the 2nd labour pains commenced, and the albuminuria reappeared. At 3.30 P.M. a dead and macerated foetus was delivered; at 7.30 P.M. the twenty-third and last convulsion occurred, supervening on a severe after-pain and the expulsion of a clot. The next day the albuminuria had disappeared, and the patient rapidly recovered.

The second case was that of a primipara, aged forty, pregnant about seven and a half months. When pregnant about three and a half months, and therefore before any considerable pressure could be exercised by the uterus, she had œdema of the feet and legs, which gradually increased, and extended to the whole body. On the 25th of August she was attacked by severe headache; on the 27th she had a first attack of eclampsia. A week after, on September 3rd, she had a second, followed on the same day by a third. On the 4th she was brought to the hospital. She was then conscious, and could answer questions. There was general œdema, and the face was red and plethoric. The urine contained a large quantity of albumen. The foetus was still alive. She continued in the same state till the 7th, when the pulse rose to 120, and the tongue was much coated. In the evening she was attacked by severe dyspnoea, on which account



venesection to 500 grammes was performed, and was followed by immediate relief. On the 17th labour came on; and on the evening of the 18th a dead and macerated child was delivered. Old and recent apoplectic patches, with portions of atrophic thinning, were found in the placenta. On the 19th symptoms of metro-peritonitis commenced, and the patient died on the morning of the 21st, two days after delivery.

## Gynæcic Summary.

### *The Antiseptic Method in Ovariectomy.*

In the *New York Medical Record* for December 9th, 1876, Dr. Marion Sims records a case of ovariectomy performed according to Lister's antiseptic method under the carbolic spray, on November 23rd. He expresses his surprise that the method has not been hitherto adopted for this operation in Great Britain, and considers that this date will inaugurate a new departure in ovariectomy. The operation lasted forty minutes, the spray being kept up all the time. The tumour was polycystic on the right side, and weighed fifteen pounds. There were no adhesions, but the peritoneal cavity contained six or eight ounces of a reddish serum. The pedicle was very short, and at least three inches broad. It was tied in three sections with strong twine, and drawn out and fixed in the lower angle of the wound, clamp fashion. The pulse never rose above 90, nor the temperature above  $101^{\circ}$ , and in two days convalescence was established.

Dr. Marion Sims is mistaken in supposing that he is the first to make use of the carbolic spray in ovariectomy. Prof. von Nussbaum, of Munich, had adopted it more than two years previously, and reported eight consecutive cases in which recovery took place, although they were by no means all of a favourable kind. Schröder, Olshausen, Freund, Wilhelm Baum, and others, in Germany, have published cases of a similar kind; in England Mr. Howse has practised the method with success for several years, and Dr. Barnes and Dr. Chambers had also operated under the carbolic spray before the date of Dr. Marion Sims' operation. An important point in reference to the adoption of the method is the question whether the increased serous effusion produced by the carbolic acid necessitates the use of drainage tubes as a necessary complement to the antiseptic method. Prof. von Nussbaum introduces six drainage tubes into the various pouches of peritoneum, and has them washed and reintroduced at each dressing. Dr. Marion Sims, however, does not appear to have used any drainage tube, and the experience of Mr. Howse also goes to show that, at any rate when there is no extensive separation of adhesions or probability of hæmorrhagic oozing, the use of the carbolic spray does not make their employment necessary. The antiseptic method in

ovariotomy will have an important future before it, if it should enable the surgeons of large general hospitals, where the mortality has hitherto varied from 50 to more than 70 per cent., to rival the results obtained by specialists at small hospitals—namely, a mortality of little more than 20 per cent.

In the *Sammlung Klinische Vorträge*, No. 111, Prof. Olshausen expresses the opinion that the peritoneum is extremely prone to absorb septic material, but that provided this be excluded, it is very tolerant of injuries. He considers that almost all deaths after ovariotomy are due to septicæmia, and not, as was formerly supposed, to traumatic peritonitis. As a means of prophylaxis against such infection he has made trial of abdomino-vaginal drainage, through Douglass's fossa, as recommended by Marion Sims, and both he himself and Prof. von Nussbaum attained by this means more favourable results than they had experienced before. He now, however, considers that it will become obsolete, as being superseded by a strict application of Lister's carbolic method. He was at first deterred from trying this by the results of three cases recorded by Schröder, of which two were fatal, and by the issue of two operations which he saw performed by Volkmann, in 1873, on cases neither perfectly simple nor specially unfavourable. Both patients rapidly died from septicæmia. He now believes that this was due to an imperfect application of the antiseptic dressing. He remarks that it is difficult so to apply it to the abdomen as to exclude all access of air, and that this can only be done by a liberal use of salicylised cotton wool to fill up interstices about the epigastrium, inguinal regions, and symphysis pubis.

Prof. Olshausen's first experience of vaginal drainage was favourable. In the first 14 cases he had only 4 deaths, but the final result was 11 deaths out of 29 cases, the rooms where the operation was performed having probably become gradually infected. Since then, operating strictly according to Lister's method, without drainage, he has had 8 cases without a death, and Schröder has had 6 without a death. Von Nusbaum had 3 deaths out of 6 cases, in which he used vaginal drainage, but after giving it up, only 5 deaths in 21 cases, of which none were from septicæmia. The author thinks that drainage is less successful in simple cases than in more difficult, because it then seems needless to inject through the tube so frequently, and recommends that, if the tube be used, injections should be made almost every hour, both by day and night, for the first three days. In three cases he tried the carbolic spray combined with vaginal drainage. The first two patients recovered, but the third died from septicæmia. With a strict execution of Lister's method, he considers that even abdominal drainage may be restricted to exceptional cases, and that the toilette of the peritoneum may with safety be made more incomplete. He has but little fear of carbolic poisoning, and has only occasionally seen a temporary blackening of the urine. He considers the intra-peritoneal treatment of the pedicle by tying it with carbolised gut to

be a necessary complement of the antiseptic method. Out of 33 cases so treated he has not once seen hæmorrhage, gangrene of the stump, or the formation of an abscess about it. When the lower part of a cyst is firmly adherent in the pelvis, he considers that it may safely be left undisturbed, the cyst-wall being tied in several sections, and the rest of the cyst cut away. He recommends the same plan also to be carried out, if possible, if the cyst is found to have become developed between the folds of the broad ligament.

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### *Adenoma of the Uterus.*

In the *Zeitschrift für Geburtshülfe und Gynäkologie*, B. i. H. 1, Prof. Schröder gives an account of several cases of adenoma of the uterus. He remarks that simple growths from the uterine mucous membrane have often a structure more closely resembling that of malignant disease than those in any other part of the body. In growths of connective tissue such numerous clusters of large spindle cells are found as closely to resemble a sarcoma; and the uterine glands are liable to be hypertrophied in such a way that, upon a section, they may be mistaken for the alveoli of a carcinoma, filled with epithelioid cells.

Two cases of adenoma diffusum are described, and two of adenoma polyposum.

CASE I.—Adenoma diffusum. A woman, thirty-nine years old, whose menstruation had been irregular for thirteen years. For eight years she had been married, but without children; for a year and a half she had had a whitish blood-tinged discharge, and for eight months profuse hæmorrhage in addition. The uterus was enlarged, the sound passing  $8\frac{1}{2}$  cm. ( $3\frac{3}{4}$  inches). It could be rotated in the cavity of the uterus, and shreds of mucous membrane were removed by it. The cervix was narrow and hard. The cervix was dilated with tents, but not sufficiently to admit the finger. The uterine cavity was then carefully scraped with the sharp curette, bringing away shreds of mucous membrane; and perchloride of iron was afterwards injected. The hæmorrhage ceased from this time, and the length of the uterine cavity was reduced to  $7\frac{1}{2}$  cm. (3 inches). By microscopic examination the shreds removed were found to be made up of alveoli clothed with cylindrical epithelium, and separated from each other only by very thin walls.

CASE II.—Adenoma diffusum. A woman, forty-nine years old, who had had four children, the last twelve years previously. For some months she had had severe and repeated hæmorrhage. The cervix was found widely patulous, but the internal os closed. The uterus was somewhat retroverted, and was enlarged and tender. After dilatation of the cervix with tents, the uterine cavity was found to be covered with inequalities, having a spongy feel. These were scraped off with a sharp curette, and perchloride of iron afterwards



injected. The fragments were found to consist of thickened mucous membrane, showing the uterine glands somewhat enlarged, and lying close together.

CASE III.—Adenoma polyposum. A woman, forty-five years old, who had been married fifteen years; without children. Menstruation had always been copious, and for the last four years exceedingly profuse. A polypus, as large as a child's fist, was found in the vagina, the pedicle being attached above the internal os. The polypus was removed by the *écraseur*, and was found to contain numerous cystic cavities of the most various sizes, resembling those seen in a small ovarian tumour. The pedicle was found to consist of uterine tissue, containing involuntary muscular fibres; the rest was made up of enlarged uterine glands, showing all transitions from the normal size to that of considerable cysts, and lined with cylindrical epithelium. The intervening substance consisted of cellular tissue, containing numerous nuclei. The growth was thus not a simple product of mucous membrane, unless, with Dr. J. Williams, the inner part of the muscular coat of the uterus be regarded as the *muscularis mucosæ*.

CASE IV.—Adenoma polyposum. A woman, fifty-nine years old, married, but without children. She had undergone several operations for polypi, the last seven years ago. Lately she had suffered from severe and long-continued hæmorrhage. The uterus was found considerably enlarged; the cervix closed. Small incisions were made in the os, but did not allow the finger to penetrate to any great distance. As the patient's husband objected to the use of tents, a long pair of forceps was introduced through the cervix, and a polypus, as thick as a little finger, was removed by its means. It was found to consist of hypertrophied uterine glands, without any cystic degeneration, combined with rapidly growing cellular tissue.

The author calls attention to a symptom which he considers to be of diagnostic importance. This is the wide dilatation of the cervix, while the internal os remains tightly closed, and the cervix thus acquires a bell-shaped form, and dilatation is rendered difficult.

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#### *The Diagnosis of Cysts of the Broad Ligament.*

Prof. Gusserow records a case of cyst of the broad ligament in which the cyst again filled after tapping, and was then extirpated. The patient was seventeen years old, had menstruated regularly since the age of fourteen, and the abdomen had been enlarging for two years. The abdomen was greatly distended, and uniform fluctuation extended all over it. In the middle line there was dulness up to a hand's-breadth from the ensiform cartilage. In the flanks there was resonance only on the left side, low down. The uterus was movable, turned rather to the left side. A segment of the tumour could be reached to the right of the cervix. The tumour was emptied by tap-



ping, 70 ccm. of watery fluid being removed. It had a specific gravity of 1002, contained a small quantity of albumen and salts, no paralbumen nor mucin. On bimanual examination after the tapping, both ovaries could be made out, the right ovary being somewhat in front and to the right of the fundus, towards the symphysis. Examination by half the hand in the rectum revealed nothing further; no trace of the cyst or adhesions could be detected. The diagnosis was that of a cyst of the broad ligament on the right side. No return of the swelling was observed for four months, but it then began to increase again; and at the end of eight months was fully as large as before. Extirpation was therefore resolved on. At the operation two adhesions to the omentum were divided, and the cyst emptied of a fluid similar to that found before. Contrary to the diagnosis, the pedicle was found to be on the left side. It was very short, and 16 cms. ( $6\frac{1}{4}$  inches) broad, consisting evidently of two layers of peritoneum, which were inseparable from the outer cyst-wall. It was tied by ten catgut sutures, and some large veins in it were also tied with silk. The patient recovered without any bad symptoms, the temperature never rising above  $37.5^{\circ}$  C. The cyst was quite simple, and was lined with cylindrical ciliated epithelium. No muscular fibres were found in its wall. The Fallopian tube was stretched over the cyst-wall, and extended to a length of 25 cm. ( $9\frac{3}{4}$  inches). Both ovaries were felt to be intact after the cyst had been removed.

The author reviews the various signs which are given as distinctive of cysts of the broad ligament—namely, that they occur in young women whose general health is little affected, contain a watery fluid of a specific gravity less than 1005, free from paralbumen or mucin, that the epithelial lining is ciliated in parts, that the cyst-wall contains involuntary muscular fibres, is often very thick, and is separable into two layers. He believes that none of these are absolutely distinctive during life, although they are generally true, and considers that the diagnosis cannot be made absolute, except by feeling both ovaries to be of normal size, after the emptying of the cyst. He has himself found, in some cases of difficult diagnosis, the fluid of a true ovarian cyst to be poor in albumen, and quite free from paralbumen, and on the other hand has, in two cases, found paralbumen present in ascitic fluid. In confirmation of this, he quotes the experience of Westphalen and Heine. He points out that the opinion of Mr. Spencer Wells and Dr. Bantock, that cysts of the broad ligament never fill again after tapping, is not fully confirmed by experience, as shown in the case recorded. Moreover, Dr. Charles Clay, out of forty cases in which the fluid removed was thin and watery, observed a refilling in six; Dr. Keith has extirpated a cyst of this kind which had refilled five times, and Spiegelberg has also removed one after repeated tapping. The nature of the fluid will generally establish a correct diagnosis, and Koeberle, who considers that such cysts should always be extirpated, has successfully removed two, by enucleating them from their peritoneal investment, having previously made a right

diagnosis. But in one case of cyst of the broad ligament exactly described by Spiegelberg (*Archiv für Gynäk.* i. S. 482), which had a thick wall of two layers, containing involuntary muscular fibres and lined by ciliated epithelium, the fluid contained resembled that of an ovarian cyst, and contained paralbumen and cholesterine. As to the source of cysts of the broad ligament, the author regards the question as unsettled as yet, whether they originate from the parovarium, or, as maintained by Waldeyer, from a remnant of the Wolffian body.—*Archiv für Gynäkologie*, B. ix. H. 3, and B. x. H. 1.

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*The Treatment of Ovarian Tumours by Electrolysis.*

Dr. Semeleder, who in 1875 published a pamphlet under the title of "No More Ovariectomy," gives further details of the success in his hands of the treatment of ovarian tumours by electrolysis. He uses a weak voltaic current, so that the patients suffer little or no inconvenience, and it is not necessary to put them under chloroform or confine them to bed. He generally introduces one needle into the tumour, and applies the other to the cervix uteri, but has not yet made up his mind the introduction of which pole gives the best results. He finds that no inflammatory reaction is set up nor adhesion produced, so that the condition of the patient is not rendered in any degree less favourable for ovariectomy, even if the method does not succeed. He considers it no less applicable to oligocystic or polycystic tumours than to monocystic, believing that not only is the liquid resorbed, but the very wall of the cyst undergoes such a change that further secretion of liquid is brought to a standstill. The applications are generally made daily, and continued from five to ten minutes. Dr. Fieber of Vienna had previously published two cases of ovarian cyst cured by electrolysis, in a pamphlet on the treatment of diseases of various organs by electricity. (*Wiener Allgemeine Medizinische Zeitung*, 1874.)

Dr. Semeleder relates the following cases:

CASE 1.—An unmarried girl, aged sixteen. The abdomen was occupied by a tumour extending a little more to the left side than to the right, and reaching an inch and a half above the umbilicus. It was very tense, and fluctuation consequently not very observable. After treatment daily for three months, even during the menstrual periods, the circumference was reduced from 96 to 92 cm., and in somewhat over two months more the "cure was complete."

CASE 2.—A married woman, aged twenty-four, who had had two children. An elastic tumour had been growing for two years, and had reached the size of the head of a child of ten years. The patient had refused ovariectomy. After five weeks' treatment, the cyst had been reduced to the size of an orange, and was quite solid.

CASE 3.—A woman, aged forty, who had never been pregnant. A cystic tumour on the left side extended upwards to the ribs, and a

hand's breadth over the median line. After a daily treatment of six weeks, the tumour was so reduced that it seemed unnecessary to continue it.

CASE 4.—A woman, aged twenty-eight, married, and the mother of five children. A soft fluctuating tumour occupied the left side of the abdomen, extending three inches beyond the median line to the right, and one inch above the navel, while on the left side it extended a little higher. Three hard masses could be felt in it. After two and a half months' treatment the upper limit of the tumour was reduced to the level of the umbilicus; the hard lumps had apparently undergone no change.

CASE 5.—A married woman, fifty-one years old, who had always been sterile: menstruation regular, rather profuse. An uneven tumour, solid for the most part, reached one inch above the umbilicus in the middle line, and still higher on the right side. Fluctuation was felt in three distinct places. The uterus moved with the tumour, but the sound could not be introduced. The author regarded the tumour as a fibro-cystic growth from the uterus. After three months' treatment the liquid contents of all the cysts had disappeared, and the tumour was consequently reduced in size.

CASE 6.—A woman, forty-five years old, who had had one child twenty-four years before: menstruation frequent and profuse. On the left side of the abdomen was a firm tumour, quite low down in the pelvis, about the size of a cocoanut. It was not adherent to the uterus, and gave a feeling of obscure fluctuation. When the treatment was interrupted, no effect had been observed. A needle was introduced several times, but afterwards, the nature of the tumour being very obscure, the current was passed only through the skin.—*New York Medical Journal*, June, 1876.

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### *The Etiology of Antelexion.*

Dr. P. Müller, of Bern, comments upon the views expressed by Prof. Schultze as to the causation of the majority of cases of antelexion of the uterus. Prof. Schultze draws a sharp distinction between pathological antelexion and what he regards as normal antelexion, which he believes to take place naturally whenever the bladder is empty. He does not admit the proof of a pathological antelexion unless its existence is established by either (1) finding that the uterus is so rigid that it remains antelexed even when the bladder is full, or (2) ascertaining that the antelexion cannot be remedied by conjoint manipulation, pressing the uterus forward by the finger placed behind the cervix, and the fundus backward by the external hand. He contends also that the great majority of cases of pathological antelexion are due to a preceding parametritis posterior, the effect of which is that the utero-sacral ligaments, running in the folds of Douglas, at each side of Douglas's fossa, become contracted, the

upper part of the cervix is thus drawn backward towards the posterior pelvic wall, and its mobility impaired. In consequence of this, the pressure of the intestines acting on the posterior wall of the fundus causes ante flexion.

Dr. Müller contends, in reply, that the frequent cases of congenital ante flexion, producing dysmenorrhœa and sterility, cannot appropriately be called normal. He himself finds that ante flexion is very common in virgins, in whom there has been no exciting cause of parametritis, and in whom the cervix is situated in the centre of the pelvis, and possesses its normal mobility. He considers that the use of the sound and the difficulty found in its introduction, afford an adequate test of pathological ante flexion, without the criteria proposed by Prof. Schultze, which are extremely difficult to satisfy. He finds that the cases of contraction of the utero-sacral ligaments are very exceptional, being generally the result of puerperal inflammation, and rarely found except in women who have borne children. He thinks that Prof. Schultze produces an artificial tension of these ligaments by pushing the cervix forwards by the examining finger, and then mistakes this for a pathological condition. If such a state is the result of previous inflammation, it is characterised by some induration or increased resistance in the neighbourhood, as well as by the mere shortening of the ligaments.—*Archiv für Gynäkologie*, B. x. H. 1.

### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

“Studien über die Uterusschleimhaut Während Menstruation, Schwangerschaft, und Wochenbett.” von Dr. Gerhard Leopold. Leipzig, 1877.

“A Case of Fibroid Tumour of the Uterus Causing Eclampsia.” By B. B. Browne, M.D. New York, 1877.

“A Third Analysis of the Statistics of Phthisis in Victoria.” By W. Thompson, F.R.C.S. Edin. Melbourne, 1877.

Communications received from Dr. Aveling, Dr. Angus Macdonald, Dr. T. Chambers, Dr. Heywood Smith, Dr. Maberly, and Dr. J. Williams.

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# THE OBSTETRICAL JOURNAL

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## Original Communications.

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### ON THE BEARINGS OF CHRONIC DISEASE OF THE HEART UPON PREGNANCY AND PARTURITION.

By ANGUS MACDONALD, M.D., F.R.C.P.E., F.R.S.E.

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*(Read before the Obstetrical Society of Edinburgh.)*

FEW subjects can be conceived calculated to attract to themselves more serious thought and attention on the part of obstetricians than the bearing of organic disease of the heart upon the condition of the pregnant and parturient woman, on account of the important issues at stake ; and yet scarcely a subject that borders on the mutual region occupied by the obstetric and the pure physician seems to have received less study from either the one or the other. The reason, no doubt, is partly due to the cramping effects of a too rigid specialism, which tends to concentrate the attention of the obstetric practitioner exclusively upon matters purely obstetrical and gynæcological, whilst the pure physician has comparatively few opportunities to watch the influence of such disorders on particular cases, inasmuch as the patients are then pretty exclusively under the care of a physician accoucheur.

It is, however, I hold, the first duty of every obstetrician to make sure that he is a physician in the first instance, and an obstetrician only in the second place, or else his position in practice degenerates into the cultivation of what at best is only an outpost of applied surgery. By so doing only can he expect to practise with success and comfort the all-important branch of the medical art which he has selected as his own.

Being convinced that the general views entertained by the members of our department of medicine on this subject are held by them with considerable looseness, and that a discussion upon this question might be the commencement of an inquiry which would eventuate in clearing up some points that are at present unsettled, I have for some time back been directing a good deal of attention to the matter, in the endeavour to form accurate views respecting it. With this object before me, I have collected together all the cases that I have notes of, which have occurred in my own practice, or in that of my dispensary pupils, and to these I have added several obtained from medical friends, and also others selected from medical literature. I have thus been able to put together a considerable collection of what seem to me extremely valuable cases.

Now, I would begin by pointing out that nearly all systematic works on midwifery mention organic heart disease with more or less prominence, as a serious complication of pregnancy and of parturition, and at the same time give suggestions for the management of such complications, especially when they interfere with labour. This is all well and good, and as the regulations for management are, on the whole, tolerably appropriate, I hope this single reference to the point will suffice, and that I shall not be expected to recur to it.

But, so far as I know, there has been no attempt on the part of any English obstetrician to differentiate the effects of the special cardiac lesions, and to define in any way their individual bearings upon either pregnancy or parturition. Or, to put it otherwise, I know of no English writer who has striven to put obstetricians in a position to answer with

intelligence the question that is every now and again asked of us by a patient who knows she has heart disease,—Should I marry? or do I run great risk in marrying? Now, though I believe that under such circumstances ladies will almost invariably ask their doctor's advice and follow their own liking, yet we ought to be able to give sound counsel, so as to clear our own consciences of all blame in such an important matter.

I do not intend to refer at present, except incidentally, to the disease known as ulcerative puerperal endocarditis. I mean to restrict myself specially to those instances of organic defect in the heart which have come into existence independently of pregnancy, but which, as is well known, may be seriously changed in the course of pregnancy or during parturition, or may so influence the current of events in these conditions as to require the most anxious attention and careful management on the part of the physician accoucheur.

But even when so restricted to cardiac complications of a chronic nature, the subject is a very wide one indeed, and one that is extremely unmanageable on account of the complex factors that come into action under the conditions presupposed.

It will be seen from these statements that my aim is not merely to refer to the general bearings of cardiac disease upon the conditions of pregnancy and parturition, but also and specially to ascertain, so far as our present knowledge will allow, the influence of the individual cardiac lesions upon these physiological states. The rapid advancement that has been made in the pathology, diagnosis, and treatment of diseases of the heart by pure physicians of late years, demand from accoucheurs something more exact than mere vague references in dealing with this important subject.

It is surely devoutly to be wished that, if possible—given that one of our patients is the victim of a special cardiac lesion—we should be able to predict what are the special additional risks, if any, to which the pregnant and parturient condition exposes her, and what are the prophylactic or therapeutic measures we are bound to adopt so as to avoid or diminish such risks.

And though at present we are not in a position to do this completely, yet I do think we ought to aim at such as an end, and that we are a considerable way on the road to it if we only gather up with care and utilise the information that lies at our disposal, whether in our own experience, or scattered here and there throughout current medical literature.

In the management of this investigation I shall adopt the following order :—

1. I shall endeavour to trace in historical sequence the attempts that have been made to elucidate the special physiological changes that take place in the heart during pregnancy and parturition.

2. I shall try to trace historically the efforts that have hitherto been made to discover the mutual bearings of cardiac disease and of pregnancy and parturition upon one another.

3. Records of some twenty-seven cases will be given, accompanied with such remarks as they seem to suggest.

4. I shall make some general observations, and endeavour to deduce some practical inferences in regard to the prognosis and treatment of such conditions.

Having thus cleared the way by these preliminary observations, I proceed to the consideration of the first part of my task.

Larcher, in 1825 and 1826, during the time he served as Interne in the Paris Maternity Hospital, first directed attention to the circumstance that the left ventricle of the heart normally becomes hypertrophied during pregnancy. He examined during these years the alarming number of 130 hearts of patients who died at this hospital, the majority of them, he says, of childbed fever, and consequently their organs may be assumed as fairly healthy, except so far as the fever interfered with them. The ages of the patients varied from eighteen to thirty-five years. From these observations Larcher concluded, first, that the heart in the human species is normally enlarged during the period of gestation ; second, that the enlargement affects almost exclusively the left ventricle, the left auricle and the right side



of the heart being little if at all charged ; third, that it varies in amount from a minimum of one-quarter the normal thickness of the ventricle to a maximum of one-third of it ; fourth, that it constantly occurs ; fifth, that it disappears but slowly during lactation. Larcher also deduced many pathological results from this enlargement. He believed, for instance, that repeated pregnancies within short periods, more especially if the patients at the same time suckled their children, might give rise, even though the heart was perfectly sound in all its openings, to permanent hypertrophy ; that it tended to produce epistaxis, cerebral congestions, and cerebral hæmorrhages even ; that it aggravated pulmonary disease occurring coincidently with pregnancy, such as bronchitis, pneumonia, or phthisis, &c. &c. There is no doubt but Larcher exaggerated the effects of the hypertrophied heart in connexion with pregnancy. But what discoverer of a new fact in science, real or imaginary, is not inclined to overrate its importance ?

Larcher's views were first published in 1828, but the full exposition of them is to be found best given in a memoir addressed to the Academy of Science, the 6th April, 1857, and published in the *Archives Générales de Médecine*, V<sup>e</sup> série, tome xiii. p. 291, 1859. These views, though generally accepted by his countrymen, were not universally so, and were denied by Dr. Rochoux, *Dictionnaire de Médecine*, t. iii. p. 504.

This led Dr. Beau, in 1843, to direct the attention of his then Interne, M. Ducrest, at the Paris Maternity, to the same point as had previously been investigated by Dr. Larcher. Ducrest examined 100 hearts, and makes the following statement relative to the thickness of the left ventricle. His plan was to measure accurately the left ventricle at its thickest part. The ages of the patients whose bodies were examined varied from twenty to thirty years. The maximum thickness of the ventricular wall occurred in five cases as 0<sup>m</sup>·018, with the exception of one case, when it reached the amount of 0<sup>m</sup>·022. The minimum thickness of 0<sup>m</sup>·011 was found in eight cases. In the majority of the cases the thickness was found 0<sup>m</sup>·016. The mean of all the

measurements gave a thickness of  $0^m \cdot 015$ . Bizot gives the mean thickness of the left ventricle in the female as  $0^m \cdot 010$ , and comparing the results of his observation with this anatomical fact, M. Ducrest argues that his results bear out to the full the truth of Dr. Larcher's views. It will be observed that the mean thickness of  $0^m \cdot 015$  found by Ducrest is equal to  $1\frac{1}{2}$  of the mean thickness of  $0^m \cdot 010$  assigned by M. Bizot to the average female heart. It would be interesting for us to know whether in all cases M. Bizot measured the thickest part of the left ventricle, as M. Ducrest tells us he himself did, as otherwise we are not sure whether the two authors are comparing the hearts on the same grounds. M. Ducrest's results are found summarised in M. le Dr. Beau's *Memoire sur le bruit des artères* (*Archives Générales de Médecine*, IV<sup>e</sup> série, tome x. p. 28).

In a prize essay sent in to the French Institute of Medicine, Zambaco made similar researches to those of Larcher and Ducrest in this inquiry, comparing the hearts of women who had died in childbirth with those of others who were not pregnant at the time of death, and found in the former that there occurred enlargement of the left ventricle.\*

Bèraud arrived at a similar result in like manner.†

Blot next attacked the problem from a different aspect. He did not compare the hearts by measuring the thickness of their walls, but by ascertaining their weights. After an examination of twelve hearts of women who died during pregnancy or the lying-in period, he found their average weight to be 9 oz. 38 gr. troy weight; whereas the average weight of the healthy heart of young women is about 7 oz. 2 dr. troy weight. It would thus appear that, according to Blot, the heart of the pregnant female gains in weight fully one-fifth during the pregnancy. He agrees with the other observers that the hypertrophy is confined almost exclusively to the left ventricle.‡

It is important to notice in this connexion that Bizot in

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\* Joulin, "Traité Complète d'Accouchments," p. 383. Paris, 1867.

† Loc. cit.

‡ "Cazeaux's Midwifery," edited by Toarnier. American edition, translated by Bullock, p. 160. 1870.

his estimate of the average female heart is considerably under the average as given by Peacock, p. 4. vol. iv. of Reynolds's "System of Medicine." It is there stated that the mean weight of the hearts of females dying between the ages of twenty and fifty-five years is 8 oz. 13 dr. avoirdupois = to 8 oz. 15.5 gr. troy.

The ordinary range in acute cases within the same ages is given as from 8 oz. to 10 oz. avoirdupois = 7 oz. 2 dr. 1 dwt. and 9 oz. 55 gr. troy respectively.

The ordinary range in chronic cases again, is put at from 7 oz. to 9 oz. avoirdupois = 6 oz. 3 dr. 2.5 gr. and 8 oz. 1 dr. 37 gr. troy respectively.

Still his results would indicate a certain though not so great amount of hypertrophy if we accept the more recent statement of Peacock as the more correct in regard to the mean average.

More lately, in the 104th number of the *Gazette des Hôpitaux*, Duroziez has attempted to demonstrate this hypertrophy on the living subject by an exhaustive examination by percussion of the cardiac region in women shortly before and shortly after delivery. He thus examined 135 women in the Parisian Midwifery Clinique, and comes to the following conclusions:—

1. The hypertrophy of the heart in the puerperal condition is demonstrable ; the heart does enlarge during the pregnancy.
2. During the first day after delivery the left cavities of the heart diminish in size, the right cavities remain enlarged.
3. At the time when the secretion of milk begins, about the third day of the lying-in period, the heart is lengthened. The heart remains during lactation enlarged ; becomes small, however, if the woman does not suckle.

4. In women who have frequently borne children, the heart is larger than in such as have only given birth once or twice.

I am sorry I have been unable to get hold of Duroziez's original paper, although I have tried hard to do so, and have therefore been forced to content myself with an abstract of it contained in the *Monatsschrift für Geburtskunde*, Bd. xxxii. s. 479.

In this connexion it is proper to state that Fritsch, in a

paper published in the *Archiv für Gynäkologie*, Bd. viii. s. 376 and 377, while allowing that there is increased cardiac dulness, denies the possibility of arriving at such accurate results from the percussion as Duroziez affects to have done, in consequence of the insuperable difficulties presented to exact percussion by the presence of the enlarged female mamma. Fritsch is inclined to explain a considerable amount of the increased dulness by upward and forward displacement of the heart from the pushing up of the diaphragm; and is of opinion further that the statements of the French authors in regard to the increase of the muscular tissues in the left heart during pregnancy are, to say the least, somewhat overdrawn. Indeed Fritsch, though in other passages he would seem to adhere partially to the view that there is normally some cardiac enlargement during pregnancy, expresses himself in this article as rather sceptical in reference to the existence of an eccentric hypertrophy of the muscular tissue of the left heart, and shows himself inclined to believe that a passive dilatation of the organ of a slight amount is sufficient to meet the necessities of the case.

But I shall leave him to express his views in his own words, translating as closely as I can:—"Now it is questionable, if it is necessary to assume an eccentric hypertrophy, if new muscular fibres are actually formed. Though in general the hearts of lying-in women on post-mortem examination appear large, yet one would require to make accurate weighings and measurements of them. Furthermore, in consequence of the absence of fixed points in the measurement of the compressible substance, the thickness of which varies with the varying quantity of blood contained in the muscles, these direct measurements would be scarcely decisive. Still, one could seek for them in the shape of remains of the hypertrophy with the microscope. In fourteen sections of lying-in women who died at different stages of the lying-in period up to three months after delivery, I however found neither fatty degeneration nor pigment in the muscular tissues."\*

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\* Loc. cit., p. 377.



Again, in a more recent paper, supplementary to the one we have just been referring to, *Archiv für Gynäkologie*, Bd. x. p. 288, Fritsch expresses himself thus :—" In conclusion, be it observed, that I can only admit as proof for a slight cardiac hypertrophy the estimation of the heart on section. To me the hearts of lying-in women appear on section constantly somewhat enlarged. But yet I must evidently withdraw this assertion, if more competent judges — pathological anatomists—contradict it." To many points in these papers, which are of very great importance, I shall have to recur again and again, and I therefore leave them for the present.

Herman Löhlein,\* one of the latest writers on this subject, has endeavoured to prove that the French authors, in demonstrating a hypertrophy of the left ventricle, are entirely mistaken, or at least have not at all proved their point. He quotes approvingly the statement of Gerhard "that the measurements of Larcher and Ducrest fall within the limits of the anatomical statements of the average thickness established for the non-pregnant female," and instances Peacock as authority. On turning to this author's statement, however, as found at page 5 of vol. iv. of "Reynolds's System of Medicine," I find the greatest average thickness of the left ventricle in females given as 1·26 cent., whilst Ducrest assigns an average for the hearts of the pregnant females he examined as 1·5 cent., which bears out to my mind a distinctly appreciable difference in favour of the views of Ducrest and Larcher. The latter author, so far as I have seen, did not, unfortunately, proceed to exact measurements. Löhlein very properly, in my opinion, objects entirely to the possibility of attaining the definite results from percussion that Duroziez asserts he has obtained.

In attempting to settle the purely anatomical question, Löhlein objects to the statements of Larcher as being so indefinite that they cannot be readily subjected to thorough criticism. But while not denying some value to Larcher's general statements in regard to the size of the heart, he maintains

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\* "Zeitschrift für Geburtshülfe und Frauenkrankheiten," s. 482. Stuttgart, 1876.

that without the data of the numbers and weights of the hearts he cannot regard such an important assertion as probable, whilst its discoverer holds it as superabundantly proved.

In opposition to the statements of Ducrest, Löhlein objects that the French author made no attempt at classifying the hearts he measured according to the cause of death and the time of its occurrence, which he thinks ought to have been done, inasmuch as thereby the condition of the muscular tissue of the heart is materially influenced. Among the diseases which produce such modifications he mentions eclampsia, chronic or acute affections of the respiratory and of the circulatory organs, and repeated and serious loss of blood.

Löhlein meets Blot's deductions from the increased weights of the hearts of pregnant women by the results of an examination of the hearts of nine women that had died in the Gynæcological Clinique at Berlin during the previous year. These had met their death either from rupture of the uterus or from some acute cause that led to a termination of life within two days after delivery, and he finds the average weight of their hearts to be 247 gm.; whilst according to Blot the weight of the heart of the pregnant female is to that of the non-pregnant as 290·95 : 220–230 gm. He therefore maintains that if the cases in which the direct cause of death tended to cardiac hypertrophy—leaving the pregnancy out of account—were excluded as in his cases, the average weight of the hearts of pregnant females would be found not greater than the average weight of the hearts of non-pregnant females. He further supports this opinion by finding in the case of six nephritic patients who had died in eclampsic seizures that the average weight of their hearts was 300 gm., and states that if he had combined the weights of the hearts of those six with those of the nine cases mentioned above, his results would have agreed very closely with those given by Ducrest.

He then proceeds with great fairness, I think, to argue that authors in maintaining the existence of an hypertrophy of the right heart, have clinically bestowed too exclusive attention to the cardiac dulness which from the upward

displacement of the heart in the course of the pregnancy is specially liable to mislead, and have not noticed whether the cardiac impulse was found to be intensified, the first sound at the apex specially loud, the second aortic sound accentuated, the radial pulse hard and difficult to compress, or whether the apex beat was thrown outwards or downwards from its normal situation, &c. He states that he submitted twenty patients to careful examination with the view of ascertaining the correctness or incorrectness of these opinions, and formulates the results of these investigations as follows:—"Doubtless the absence of all the clinical symptoms by which we recognise the hypertrophy of the cardiac muscle is the rule at the end of the normal pregnancy, its occurrence, on the other hand, is the totally rare exception." After expressing the opinion that a sort of teleological argument had had considerable influence with Larcher and the other supporters of the hypertrophy theory—viz., that such a condition being wanted to explain their beliefs in regard to certain symptoms, was accordingly found to exist, Löhlein comes to the following general conclusion:—"The proofs ever brought forward anew for Larcher's doctrine of the hypertrophy of the hearts of pregnant women are insufficient, anatomically as well as clinically. Our own observations of healthy women in advanced pregnancy and in the lying-in period has given us no support for this assumption. It cannot therefore be laid down as an explanation of the increase of all the troubles that not infrequently come on in the case of women affected with disease of the heart during pregnancy, parturition, and the childbed period."

It will thus be seen that the history of inquiry, as conducted by French observers, who have bestowed much time and attention upon the subject, attacking the problem from various aspects, so as to test one method of observation by the results of others, in order thus if possible to eliminate the errors that might vitiate a single method, tends to establish almost beyond a doubt that there is a degree of hypertrophy of the heart as a physiological condition during the latter months of pregnancy. There seems also a very marked

consensus of opinion among them that the gain in weight is chiefly, if not exclusively, confined to the left ventricle. From what has been stated, however, in this paper, it cannot be doubted that the amount of this hypertrophy has been exaggerated. Still, notwithstanding the strong negative statements of Löhlein, and his specially incisive remarks regarding the usual absence of clinical evidence of cardiac hypertrophy during the latter months of pregnancy in the case of women with normally-sized hearts, I cannot help feeling convinced that there is a certain amount of such hypertrophy. My reasons are the following :—

1st. I cannot conceive so many honest observers as have examined such large numbers of the hearts of women dying during the childbed period to have been completely mistaken in a matter of the kind, though they may have been so in regard to the amount of the increase of size.

2nd. I think it can be shown that, though they have erred in using tables that under-estimated the normal heart in respect both to weight and thickness, and consequently were led to make the difference appear greater than it should be, there still, even after such reduction is made, remains a substantial difference in favour of their views.

(a.) Thus, in regard to the average thickness of the left ventricle in pregnant and non-pregnant women.

Ducrest states the average thickness at its densest part of the wall of the left ventricle in the puerperal woman at 1·5 cent.

Bizot gives in the same cavity the average thickness for women generally as 1·00 cent.

Peacock again makes the average thickness of the left ventricle in women generally, at base 1·102 cent., at apex 0·526, at mid-point 1·26.

It will thus appear that, granting that Bizot's averages are too high, and assuming Peacock's, as being the later, to be the more correct, there is still a margin of ·24 of a centimetre in favour of Ducrest's observations.

(b.) If then we take and compare the weights as given by Blot and by Peacock—



Blot's average in the puerperal condition is 9 oz. 38 gr. troy.

Peacock gives the general average of healthy hearts in females that have died from twenty to fifty-five years of age as 8 oz. 15·5 gr. troy. In the case of those who died of acute diseases, the averages varied from 7 oz. 2 dr. 20 gr. troy to 9 oz. 55 gr. troy ; whilst of those who died of chronic diseases the averages varied from 6 oz. 3 dr. 2·5 gr. troy to 8 oz. 1 dr. 37 gr. troy.

No doubt puerperal deaths ought to be classed with the acute cases. But then it will be observed that, though we grant this demand, the average heart of the puerperal woman, according to Blot, is equal to the maximum of the hearts in acute cases, according to Peacock, which certainly points towards the correctness of Blot's observations. Another remark has to be made in this connexion, and it is this.

Since Peacock, in constructing his tables of the weight of the healthy hearts of females dying within the ages of twenty to fifty-five, must surely include a very large proportion of observations made on the hearts of women who have died in connexion with child-bearing, as during the period of sexual activity the accidents attending pregnancy and parturition are unfortunately most fatal to female life, it is only reasonable to conclude, that by their addition to the gross weights of the healthy hearts of non-puerperal females, his average may have been unduly raised for acute cases. If this be true, Peacock's averages for acute cases, being high, ought rather to favour the doctrine of there being a certain degree of hypertrophy in the hearts of parturient females.

(c.) It is further to be noticed that, even on his own showing, Löhlein's average is 17 grm. over the highest average of the hearts of the non-pregnant females as given by Blot, which of itself indicates a slight increase in the average even in his nine cases. But we are not prepared to allow that the hearts of patients dying of eclampsia should be deducted, as renal disease in connexion with eclampsia is usually an acute ailment, which could produce little change in the heart. And Löhlein's results, if these are included, really confirm the views of Blot.

If therefore we grant that the hypertrophy, though real, is much less than the French authors believed it to be, we have, it appears to me, a sufficient answer to the criticism of Löhlein and others that evidence of marked cardiac hypertrophy are absent, whilst we at the same time allow for such an amount of physiological change as shall explain much of the phenomena that have been, as I believe, properly referred to cardiac hypertrophy during pregnancy.

3rd. A certain amount of cardiac hypertrophy is not only rendered probable by the existence of greater work for the heart to perform during pregnancy, but has analogues in many similar changes that occur during pregnancy in other organs.

On one occasion only have I had the opportunity to examine the healthy heart of a woman who died in childbed since my attention was specially drawn to this subject. In reference to that case, truth compels me to state that the left heart did not appear either to Dr. Wyllie or myself to be appreciably hypertrophied. But it was the heart of a very small woman, who died two days after delivery by craniotomy. We had only one opportunity of examining the heart hurriedly and by bad artificial light, our main object being to secure the pelvis, which was very much deformed. This observation therefore could not count for much.

I have, however, tested with some degree of care the limits of precision attainable by percussion in the latter part of pregnancy and in the lying-in period, and feel warranted in affirming that such an amount of accuracy as Duroziez affects is, in my judgment, unattainable, and that to attempt it can lead to no trustworthy or satisfactory results.

I have had taken for me a considerable number of sphygmographic tracings, by my friends Drs. Wanostrocht and J. Playfair, with the view of ascertaining whether there existed during the latter months of pregnancy such an amount of vascular tension as Marey's instrument could detect, but the results have led me to no very positive conclusion as yet. All I have been able to observe is in some cases a certain extra fulness and roundness of the tracing at the top of the curve, as if the wave were specially powerful, and kept the

arteries longer fully distended than usual. The same peculiarity is seen both before and after delivery, and the sphygmographic tracings indicate no loss of tension in the lying-in period.

It is plain that as the amount of blood circulating within the mother's vessels during the latter months of pregnancy is increased beyond question, the same must be true of the amount circulating in the heart within a given time, since the heart is only a section of the general vascular system, unless it could be shown that the heart beats more quickly during the latter months of pregnancy than at other times. But the latter is not the fact; therefore it follows that at each contraction of the heart a larger amount than normal must be propelled from the ventricles, and at each diastole a larger amount must find its way to these cavities. And the same must be true of the auricles.

It follows therefore that all the chambers of the heart must be somewhat dilated during the latter months of pregnancy, though it would appear that the increase of muscular tissue is restricted to the left ventricle. There is therefore reason to believe that in the left ventricle during pregnancy we have as a physiological condition a certain degree of increase in its capacity, associated with a variable amount of muscular hypertrophy in its walls; and in the other chambers we have the same slight dilatation, uncompensated by muscular hypertrophy. The application of this relationship under pathological conditions, however, I leave till I have traced,

2nd. The efforts that have hitherto been made to discover the mutual bearings of cardiac disease and of pregnancy and parturition upon one another.

Foremost among observers in this work must be placed Hecker. In 1860 he recorded two fatal cases of heart disease that occurred in the midwifery institution at Munich, and gives a short account of the post-mortem examination.

The one was a case of mitral stenosis of a moderate degree proving suddenly fatal from pulmonary œdema, and the other presented extreme mitral disease with dilatation of the right ventricle. Tolerably lengthy abstracts of both are given in my collection of cases (see Cases VIII. and XVII.).

Hecker makes the following comments upon those cases:

“The danger to women who suffer from valvular lesions, which is determined by pregnancy and parturition, appears to me capable of developing itself specially in two directions: in the first place, during the latter months of the pregnancy, such a narrowing of the thoracic space is produced that the lungs, already embarrassed in their functions by the cardiac lesion, become, at times quite acutely, functionally incapable through a serous effusion, and life is thereby brought to a standstill; or the heart is so used up by the exertions of the labour that its already disturbed mechanism is brought completely to a standstill, and thereby an end is made of life.”\*

It is to be noticed in this connexion that Hecker's statement about the narrowing of the thoracic space by pressure of the abdominal tumour is, as far as regards uncomplicated pregnancy, proved by scientific observation to be essentially incorrect. In a paper by Dohrn† upon this subject, which contains an elaborate series of cyrtometric observations on the chest made the week before and the week after parturition, he recounts the spirometric observations of Küchenmeister, of Fabius, and especially of Wintrich, which prove that the vital capacity of the lungs in the human female is constant throughout pregnancy, refers also to the observations of Gerhardt in reference to the changes in the height of the diaphragm, and is led to the conclusion, that while the perpendicular axis of the thoracic cavity is diminished during the latter months of pregnancy, and likewise its antero-posterior axis at the lower part of the cavity, the transverse diameter is at the same time much increased, so that as a whole the cavity is not at all, or very triflingly, diminished, except some pathological condition is present, such as hydramnios, ascites, &c.

Gusserow‡ also more lately applies these facts to help in the steadying of our views in regard to premature labour, when employed with the intention to benefit acute intra-thoracic inflammation. He holds that if hydramnios, ascites, &c., be present, then you may perform premature

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\* Hecker and Buhl, “Klinik der Geburtskunde.” Leipzig, 1861, s. 173.

† “Monatsschrift für Geburtskunde,” Bd. xxiv. s. 414.

‡ Ibid., Bd. xxxii. s. 88.



labour to facilitate the action of the chest, but that if it is simply to get rid of threatened suffocation from causes entirely restricted to the chest, such as acute pneumonia, then the certain harm which will result from the performance of the operation is far too great to warrant the extremely nugatory, if indeed not entirely illusory, good that the operation promises. His statistics of recorded cases certainly, so far as they go, support this view. These references are perhaps a little out of place here, but I mean to utilise them further on, and they help in keeping the real condition of matters clearly before us. It seems to me that they ought to be of use in assisting us to weigh the propriety of inducing premature labour in connexion with heart disease.

We next come to Spiegelberg's paper upon the relation of chronic heart disease in respect to the pregnant and parturient conditions, which was published in 1871, and which is the most valuable contribution I know of on this subject.\*

Of Hecker's remarks above quoted, Spiegelberg observes: "The above propositions rather describe a correctly observed fact than explain it; also the cases in which the danger developed during the pregnancy is terminated by the labour, and those in which the danger only arises subsequently to the latter, are not elucidated by them." Spiegelberg believes he has found the solution of the difficulty in the existence of suddenly diminished arterial pressure and increased venous pressure. He writes as follows:—"These unfortunate accidents are rather conditioned by this, that the degree of the compensation of the cardiac lesion being under ordinary circumstances enough to make the situation tolerable, is no longer sufficient for the altered, and especially for the suddenly altered, relations of pressure; in this respect, however, the compression of the thoracic space in pregnant women—in the absence of undue abdominal distension—being quite immaterial, if generally present, is not of the first importance, but the altered pressure, under which the heart acts during the pregnancy in comparison with the condition after the labour."

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\* "Archiv für Gynäkologie," Bd. ii. s. 236.

Spiegelberg goes on to argue that the introduction of the placental circulation imposes upon the heart the task of moving a greater amount of blood under a greater amount of tension, so far as concerns the general circulation, than in the non-pregnant state, and that this is rendered possible by the hypertrophy of the left ventricle, as demonstrated by the French authors I have already referred to. But he proceeds to maintain that, "With the expulsion of the child and its membranes, these relations (of pressure) are suddenly changed, the placental circulation is eliminated, the numerous and wide utero-placental vessels are shut, the pressure in the aorta sinks ; hereupon the pressure in the venous circulation increases ; this results still further for the reason that whilst the channels are in part (in the uterus) become impassable, the mass of blood is still relatively increased ; for the hæmorrhage during the labour in normal cases is not so copious as to reduce the previously existing increased mass (of blood) immediately to the non-puerperal standard. In consequence of the increased pressure arising in this manner in the veins, to which is added the greater mobility of the diaphragm, acting in the same direction, brought about by the emptying of the uterus, the blood after delivery flows more copiously into the thoracic cavity and to the lungs : the work for the right heart increases."

"It is now readily intelligible that these changes of pressure, quickly overcome and equalised by a sound heart, may act so as to bring into perturbation a mechanism disturbed by a valvular lesion. Where and how far they do this will essentially depend upon the situation of the lesion, and upon whether it is a compensated, or a still relatively acute one, in which the compensation of the disturbance has not yet been established. At the same time, collateral circumstances, such as the degree of distension of the abdomen in the pregnancy, likewise that of the mobility of the diaphragm, the amount of hæmorrhage at and immediately after delivery, may still influence and modify the phenomena." Setting out from these premises, Spiegelberg proceeds to maintain (he restricts his attention to lesions of the left side of the heart only) that in the case of aortic incompetency the serious

symptoms of cardiac disturbance as a rule appear during the pregnancy, and usually about its second half, in consequence of the compensation being insufficient to meet the exalted tension in the arterial region. These functional disturbances, especially attacks of dyspnœa and extreme cardiac irregularity, are apt to lead to premature interruption of the pregnancy, attain the most threatening height during the labour, and if it is once completed, speedily remit, and often disappear entirely, as the aortic pressure now falls, and that in the veins suddenly increases.

On the other hand, he asserts that when the disturbances originate in insufficiency of the mitral valves and in stenosis of it, which is mostly coincident with incompetency, distension of the abdomen, the degree of mobility of the diaphragm, the condition of the lungs, and especially the presence or absence of compensation by hypertrophy, here of the right ventricle, are of much more importance than in those lesions that affect the aortic valves.

Such conditions, according to our author, present three possibilities, which we may briefly synopsis thus :—

1st. The lesion may occasion no disquieting symptoms, there being few, if any, complications, and the compensation being good.

2nd. From over-distension of the pulmonary channels, symptoms of disturbed pulmonic circulation may gradually appear during the pregnancy, especially within the latter months, or suddenly, if from any cause the diaphragm is persistently kept in the position of expiration. Even under such conditions of mechanically obstructed pulmonary circulation, competency may be established by hypertrophy of the right ventricle, and the symptoms may subside rapidly after labour, or an aggravation of the symptoms, with dyspnœa, pulmonary catarrh, pulmonary œdema, general œdema, &c. &c., may result. All the distressing and dangerous symptoms attain alarming proportions during the labour, which is usually *premature*. After the labour they may remit or get worse.

3rd. The symptoms of congestion may remain undeveloped during the pregnancy in mitral lesions of recent date, and

alarming symptoms be postponed till after the confinement, due, according to Spiegelberg, to the fact that the right side of the heart is over-distended with blood under excessive pressure, whilst the hypertrophied left heart aggravates matters by pumping back the blood into the lungs.

Spiegelberg supports his views by the records of four cases, two of mitral and two of aortic lesions. Of these I give abridged translations among my cases, and therefore forbear from making any farther observations upon them at present, except simply to say that the most of his statements as to the results of the cardiac lesion are fully borne out by the facts found in the cases I have been able to collect.

Spiegelberg's paper was published about the middle of 1871, and in the March number of 1872 of the *L'Union Médicale* is a lecture by M. Michel Peter, delivered at the Hôpital de la Charité, the 27th of November, 1871, beginning in the following terms:—"I wish to speak to-day of facts which the authors of treatises on diseases of the heart have left in the shade, and which authors of treatises of obstetrics seem to me to have entirely forgotten—those facts are the pulmonary accidents to which pregnancy exposes women affected with disease of the heart.

"We have seen that pulmonary accidents are necessary at a certain period of cardiac affections; well, that pregnancy renders those accidents both more abrupt, and more formidable on account of this abruptness even, is self-evident if only we reflect a little upon the condition of the circulation in this transitory physiological state. Only as it has not as yet been spoken of, however simple it may be, it is still necessary that I should speak to you about it; and you will presently see that we treat here on a point of practice of the highest interest."

The author then proceeds to record two cases at length in which organic heart disease gave rise to extremely threatening pulmonary symptoms, in the shape of suffocation, congestion, and œdema, about the sixth month of pregnancy. He merely refers to, but does not record at length, other two similar cases. There comes out a wonderful similarity between these cases—in regard to time of



onset and general symptomatology. In the two first cases our author frankly confesses that he mistook completely the causation, as he overlooked the heart disease in both of them, diagnosing simply pulmonary engorgement in the first case, and subacute phthisis in the second. Warned by his previous mistakes, he readily detected the chain of causation in the latter two cases. His treatment of the first case strikes one as specially heroic—antimony and blood-letting by cupping and venesection; yet it is so far justified that it succeeded when the patient was believed to be actually in the jaws of death. The symptoms of suffocative catarrh, and of extreme cardiac irregularity supervened in the first two cases during the fifth month, in the second two later on. Peter's cases *seem* (for the statement as to physical signs are painfully general) all to have been of mitral insufficiency, complicated in one instance with mitral contraction. He argues that there is double reason to expect the heart when pre-existently diseased to give rise to such serious complications during pregnancy; first, because the total amount of blood is augmented in the pregnant female; second, because her left ventricle is hypertrophied. In all his cases except one he found the lesion restricted almost entirely to the smaller circulation. The systemic circulation was carried on tolerably well, the right heart showed no unhealthy symptoms, and the evil effects of the pregnancy expressed themselves chiefly to his mind as a consequence of the regurgitation, made more injurious during the pregnancy by the increased mass of blood and increased power of the left ventricle. It only comes into play when the mass of blood needed to support the child, as well as the utero-placental circulation, become of sufficient extent to be of real importance—*i.e.*, about the fifth or sixth month. He recommends as a practical result, first, the greatest care as to movements and exposure, supposing a patient with heart disease becomes pregnant; second, the avoidance of pregnancy in future, and third, the avoidance of lactation in all cases.

This French author does not hold his subject so tightly in hand as his German confrères. For instance, it does not seem to have struck him that the child's circulation is carried

on by its own heart power. But still his paper is a valuable and practical contribution to this difficult subject. I am inclined to believe that his first case was one of mitral obstruction, as well as of insufficiency, as one seldom hears a rasping mitral murmur from insufficiency alone ; and though the author states that it occurred with the first time of the heart, he does not define very accurately its relations to the first sound. At any rate, as we shall abundantly prove further on, symptoms of the kind that occurred in M. Peter's cases are very common in combination with stenosis of the mitral orifice.

*(To be continued.)*

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## ON THE TREATMENT OF PERINEAL RUPTURES.

*(Reply to Dr. Chambers.)*

By GEO. GRANVILLE BANTOCK, M.D., F.R.C.S. Edin.

Senior Surgeon to the Samaritan Free Hospital for Women and Children.

THE OBSTETRICAL JOURNAL for April contains a communication from Dr. Thomas Chambers, which appears to demand a reply from me.

I leave the matter of definition to my professional brethren, merely reiterating that it is not in accordance with clinical observation to find ruptures of the perineum answering to Dr. Thomas's classification.

I am glad to find that Dr. Chambers agrees with me as to the importance of the "immediate" operation. When, however, he says: "I first performed this operation with success, using the twisted simple suture, on February 26th, 1866, Mr. Baker Brown having twice operated on the patient, using his quilled suture," it does not appear clear to which operation he refers. Mr. Baker Brown expressly states that in the immediate operation the quills are unnecessary unless the recto-vaginal septum has been injured ; so that I have difficulty in understanding that Dr. Chambers means to imply that Mr. Baker Brown had twice operated immediately after the rupture, with success on each occasion.

One would rather infer that the "remote" operation had been twice performed by Mr. Baker Brown without success, and that Dr. Chambers had succeeded with the simple suture. More of this anon.

Dr. Chambers finds fault with me for not describing the immediate operation more fully. It appeared to me, in view of the very precise instructions given in describing the mode of passing the sutures in the "remote" operation, that it was sufficient to say, "that simple sutures should always be used, and that care should be taken to embrace the whole depth of the wound, so as to restore the perineal body to its original state." In preparing my paper for publication in a separate form I have already met this objection.

Dr. Chambers remarks that I have brought "a long list of charges" against Mr. Baker Brown's operation. Yet in the very next paragraph he says: "I do not mean to say that" it "either was or is free from objections; but I do say that it was a great step in advance in the right direction," &c. I have never denied this; but have even given Mr. Brown the credit of establishing the operation in this country.

He denies my statement that, as a consequence of the excessive suppuration which so frequently attends the use of the quills, "in the case of complete rupture a recto-vaginal fistula is by no means rare," and that in cases of "incomplete rupture" "a perineo-vaginal fistula remains." (I should have used the word *often* before "remains;" but the context renders the omission obvious.)

That an operator who stood unsurpassed, if not unrivalled, in rapidity of execution, and in facility and delicacy of manipulation, as did the late Mr. Baker Brown, should have failed in this way is surely strong presumptive evidence of something wrong in the "method" rather than in the execution of it, inasmuch as that failure has been followed by success in more instances than one, under a different method, under his own as well as other hands. Need I go further than this in support of my objections to the quills? In fact, I claim Dr. Chambers as a supporter of my views; for it is evident that he also has given up the quills.

Dr. Chambers says he has "never in a single instance seen

anything of the accidents" to which I referred, "upwards to complete failure and even death." I have a right to ask, then, why he has departed from the strict letter of Mr. Baker Brown's operation.

Here is the evidence from a public source—viz., Mr. Brown's work on the *Surgical Diseases of Women*, 3rd edition, in confirmation of my statement. Amongst the cases of complete rupture, in Nos. 3, 4, 12, 24, 32, 47, 54, there remained a recto-vaginal fistula; in No. 62, result "incomplete" after remote operation, and subsequently after immediate operation, a perineo-vaginal fistula. In Cases 19 and 21 failure, and in 11 and 56 death was the result. It will, moreover, be seen that this list is brought down only to March, 1864, and I must state that not one of the many cases I witnessed under his hands is here included. I regret thus to have to refer to the results of one who is no longer amongst us.

Now that the matter has been brought so forcibly before me, it appears to me that I may justly lay claim to this method as *my own*, for it will be found to differ from any hitherto published. But it must be taken in its entirety.

Dr. Chambers appears to feel hurt that I anticipated him in the matter of publication, and compares his dates with mine for the purpose of establishing his claim to priority. As we do not perform the *same* operation, the question of priority can hardly be discussed, there being nothing in common between us except in not using the quills. If I am right in inferring that Dr. Chambers quoted his case of February 26th, 1866, as one of the remote operation, I yield the palm to him. This method, however, of simple twisted suture (metallic) was first employed, according to Churchill, by Dr. Mettauer, of Virginia (U.S.A.). If, on the other hand, Dr. Chambers means the "immediate" operation, then I have to state that I performed this operation several years before.

Dr. Chambers might have seen that the case I quoted (C.C., p. 662) as having been operated on by me on May 29th, 1876, was not my first. I quoted the case as a difficult one, and to show that a complete rupture, complicated



by a recto-vaginal fistula, could be cured by one operation. My first "remote" operation with the metallic suture was performed in August, 1867, and the first in which I used the silkworm gut on March 15th, 1874.

Let me here state that the reason why I did not read my paper at the Sheffield meeting of the British Medical Association was that the pressure of private and public professional work prevented me from attending. I may also state that I afterwards remodelled my paper for publication, adding illustrations, and that the superabundance of matter prevented its acceptance by the Editor of the Journal.

Dr. Chambers says: "It is remarkable that an operation so similar in its *general* principles should be suddenly and simultaneously *conceived* by men working apart from each other." Now, there would have been nothing remarkable in this, even if Dr. Chambers were right in his premisses. It is an everyday occurrence. "Could they, by any possibility," he asks, "be indebted to the same source for the conception of new ideas—viz., 'to the perineo-plasty proposed by Simon?' If such should be the source from whence Dr. Bantock drew the first ideas of his method, it would have been well had he made the acknowledgment." In my paper I distinctly stated the source to which I was indebted, in these words: "In my next case I was led to adopt the simple suture by witnessing a case operated on twice unsuccessfully with quills, and subsequently with success by using the twisted suture (silver wire)." This was in 1867. I have never seen Professor Simon's work, and even at the present time have no idea as to what his method is.

He (Dr. C.) prefers silver wire, which he secures by Aveling's "coil and shot," and he regards the latter "as the simplest, cleanest, and most efficient mode of securing wire sutures." I demur to this proposition, but leave the question to those who may still use the silver wire.

When Dr. Chambers says that, like Mr. Baker Brown, he regards "double lateral division of the sphincter ani as an *essential* part of the operation," he indicates his retention of the only part of the operation which was peculiar to Mr.

Baker Brown. I have stated that experience proves that "this proceeding is altogether unnecessary," and in this I am supported by the high authority of Dr. Henry Savage, who, from anatomical considerations, has arrived at the following conclusion—viz., that "the success of operations for the closure of perineal lacerations is obviously not promoted by the division of the superficial anal sphincter." This statement is endorsed, *as the result of experience*, by Dr. T. Gaillard Thomas, who quotes Sims, Emmet, and Peaslee as agreeing with him. To this I have the satisfaction of adding the testimony of Mr. Spencer Wells, who, in a private communication, says: "I have scarcely ever found it necessary to divide the sphincter in perineal operations. I can only remember two cases where I did it, and I consider it a perfectly unnecessary complication of the operation in ordinary cases." Further, in a review of my paper in the *Archives de Tocologie*, March, 1877, Dr. Cazin says, on this question, "he is in accord with a large number of my countrymen (Verneuil, &c.)"

Surely, then, it is not *essential*.

As to the period at which a patient should get about after operation we appear to be agreed. In the case quoted there was no prolapsus uteri, and therefore no necessity for keeping the patient in the recumbent position longer than was necessary for the healing of the wound. In my second case I was in no hurry to let the patient get up, in consequence of the prolapsus, and the result was that, three months afterwards, the uterus, which before the operation appeared at the vulva, was in excellent position. In this respect I was perhaps only more *fortunate* than Dr. Chambers.

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## PERI-UTERINE HÆMATOCELE AND PELVIC CELLULITIS CONTRASTED.

*Four Cases under care of Dr. GRAILY HEWITT, at University  
College Hospital.*

Narrative by Mr. S. H. BURTON, M.B. and B.Sc. Lond.,  
Resident Obstetric Assistant.

CASE I.—A. R., aged thirty-four, admitted March 12th, 1877.

*Previous History.*—Patient has lived all her life in London. Her general health up to the present time has been good. Menstrual functions performed regularly up to date of illness. Father died of phthisis, family history otherwise good. She was married thirteen years ago; has had five children after easy labours. In November, 1875, had a miscarriage. Last Christmas (1876) she went a week over her period, when she had an attack of flooding that lasted three weeks, the discharge containing many and large clots; this the patient called a miscarriage; she had to be plugged before the bleeding was stopped. After this she had pain in lower part of abdomen and to the right. On Friday, March 1st, 1877, she scrubbed out a room, and went to bed, feeling very well. She awoke suddenly in the night with great pain of a lancinating character over the lower part of abdomen; she got out of bed to pass a stool, and after this the pain became worse, and with this a feeling of pressure on the rectum. She became very faint, and felt "as if she were going to die." She got back to bed with assistance, and the pain still continued. Diarrhœa and vomiting occurred after this. Patient shivered when she got out of bed, but not afterwards. No fever noticed by patient, but after sleeping she has perspired much. The pain has continued up to the present time, being sometimes very sharp, at other times of a dull aching character.

March 13th.—*Present State.*—She is a thin, delicate-looking woman, eyes sunken, with dark areolæ round them; marked anæmia of mucous membranes; no œdema of legs; no cough; temp. 99°·8, A.M.

*Chest:* hyper-resonant, breath sounds natural, no râles. *Heart:* second sound accentuated at base and apex, no murmurs. *Abdomen:* lax, resonant in both flanks, but the note in left flank is rather high-pitched. Pain starts from one iliac fossa to the other. There is no dulness over the fossæ—no undue sense of resistance. The pain is increased on deep palpitation. *Tongue* red, and glazed in centre, and moist. Mucous diarrhœa is present.

*Vaginal Examination by Dr. GRAILY HEWITT:—*Uterus appears very low down; feels as if considerably enlarged in every direction, starting from os uteri; but its outline cannot be defined posteriorly.

Sound enters in a direction forwards, showing that the enlargement which is present is at all events quite posterior to cavity of uterus. Sound enters normal length, and causes slight bleeding.

*Rectal Examination.*—About two inches from anus the finger is stopped, and the tumour which was felt from vagina is found to have a distinctly rounded outline. It is moderately painful on pressure; it gives the feeling of elasticity, and in places is uneven. The tumour is about the size of an ordinary cocoa-nut; no error of *micturition*.

*Treatment.*—Rest in bed; hot water (100°); vaginal injections night and morning, and a mixture of bromide of potassium and iron were ordered.

March 22nd.—Patient is much better. She has more colour in her face, takes her food better, has only fitful pain in abdomen; no pain on deep palpation. The mucous diarrhœa is checked, and she does not complain of pressure on rectum. *Vag. Ex.*—Tumour notably diminished in size, sound passes a little *backwards*; on rectal examination, the diminution is more evident, the finger passes easily behind the tumour, which is now about the size of a Tangerine orange probably. Ordered acid and bitters instead of the bromide and iron, and simple enema every day.

March 28th.—Patient continues to improve. She is much stronger, and able to sit up in the evening and to walk about the ward.

She was discharged a few days after.



*Temperature.*—For the first five days it varied from 99° to 101°, there being an evening rise ; after this it was normal.

The *diagnosis* in this case was to the effect that the patient had been subject to retroflexion of the uterus ; that the violent exertion (scrubbing) had caused extravasation of blood behind the uterus (probably extra-peritoneal), and that in the absorption of the effusion the uterus was slowly returning to its former position.

CASE II.—*Peri-uterine Hæmatocœle.*—E. A., aged twenty-five, admitted March 19th ; married two years.

*Previous History.*—Patient has always been in comfortable circumstances. Married two years. She had one child stillborn at the eighth month ; nine months after this had a miscarriage, being three months gone ; four months after this a second miscarriage (two months gone) ; eight months after this—*i.e.*, February, 1877—the last miscarriage (two months gone).

*Menstrual History.*—Catamenia began at fifteen. Regular before and since marriage. No period since last miscarriage in February, 1877. Occasional leucorrhœa.

January 14th, 1877.—Patient had severe pain in hypogastrium, painful and frequent micturition, and some blood was passed ; the doctor attending said she had inflammation of the bladder ; she had no swelling in the abdomen then. A week after the miscarriage patient got up ; just after this, while sitting down, a severe pain was felt in hypogastrium ; she did not turn faint ; the main symptom was the pain. She sent for the doctor, who noticed the swelling in the hypogastrium, which patient says was much larger than it is now. The pain became worse up to admission.

March 20th.—*Present State.*—She is a tall, largely-built woman, who has evidently wasted. Skin moist, and easily pinched into folds. Expression of face free from pain. Mucous membrane anæmic. No œdema of legs. *Chest*, long, narrow, and symmetrical ; expansion good. Percussion natural. Breath sounds healthy ; no râles. *Heart*, apex beat in normal position. Sounds normal at base and apex.

*Examination by* DR. GRAILY HEWITT.—*Abdomen.*—Hy-

pogastric region occupied by a smooth, symmetrical, hard tumour, extending as high as umbilicus, apparently close to skin.

*Vaginal Examination.*—Through roof of vagina is felt in front of uterus and apparently distinct from it, a hard, resisting, rather sensitive tumour, filling the space between uterus and symphysis, filling also the space between uterus and right wall of pelvis ; extending a little beyond middle line on left side, but not much. This tumour is evidently continuous with that felt in hypogastric region.

*Uterus.*—Os is felt rather soft in texture, also the cervix, occupying a position only slightly posterior to the normal one. Sound not used.

Difficulty in micturition, but no pain. Tongue moist, red, and glazed.

Appetite bad. Bowels regular.

Ordered bark and ammonia, nourishing diet, and perfect rest.

March 28th.—General health is much improved. She is less anæmic. Appetite is good. The swelling in abdomen as before. Less difficulty in micturition. Lin. iodi has been painted twice over abdominal swelling.

April 4th.—Patient continues to improve in health. The abdominal swelling as before. No difficulty in micturition. Lin. iodi is still used ; pot. iodid. gr. v. ordered.

*Temperature* has varied from  $99^{\circ}$  to  $101^{\circ}6$  ; lately it has been  $99^{\circ}$  A.M.,  $100^{\circ}$  P.M.

The diagnosis arrived at was, peri-uterine hæmatocele following exertion in a patient who had been only one week before the subject of a miscarriage. The effusion evidently very considerable in amount.

CASE III.—*Pelvic Cellulitis.*—J. M., aged twenty-six, admitted March 12th.

March 14th.—*Previous History.*—Menstruation tolerably regular formerly. No menstruation since confinement (Jan. 12th). Patient has lived all her life in London in comfortable circumstances. She has been married four years ; had three children and one miscarriage between first and second child ; youngest child two months old, born at full term after a quick

but painful labour ; there was nothing unusual at time of labour ; three days after labour the lochia ceased ; she continued suckling for seven weeks. Pain in the left ovarian region came on the day she was confined. (Before confinement she suffered from pain in right ovarian region, having received a blow in right inguinal region when four months pregnant). Directly after confinement patient had a rigor, " her teeth chattered and the bed shook."

Every day after this for six weeks patient had one or two rigors, after each of which " she used to turn very hot and then perspire." On the fourth day she got up out of bed for half an hour to have bed made ; on the ninth day she had her things on, but the shivering and sweating still continued. On the twenty-first day she noticed a " lump" in the left iliac region, which was very painful.

*Present State.*—She is lying on her back in bed with both knees drawn up. The expression of her face is that of suffering. She is of sanguine temperament, anæmic, with bright circumscribed flush on both cheeks. Her skin is moist with perspiration, temp. 101.1 (*vide Table*). No cough.

*Chest.*—Some fluttering under left clavicle ; good resonance all over. Breath sounds healthy ; no râles.

*Heart.*—Apex beat in normal position ; no murmurs ; action rapid (120). Pulse small and deficient in tone. Tongue moist, tremulous, and furred ; appetite bad ; bowels regular.

*Examination by Dr. GRAILY HEWITT.*—*Abdomen* : Very tender to touch ; lower part occupied by a swelling, smooth, very resistant, extending upwards to an undulating line beginning two inches above left anterior superior iliac spine, and extending to the middle of right Poupart's ligament, on the right upper edge about two inches lower than on the left. The swelling appears to be close to the skin. The resistance and tenderness of this mass are most marked just to left of median line.

*Vaginal Examination.*—Vagina relaxed and hotter to the feel than natural. On left side of uterus is a firm solid mass extending from posterior part of left side round to the right side of the pelvis, by the front leaving the posterior part free. The mass fixes uterus, and is painful on pressure, but not so

painful as the abdominal swelling. Micturition : no increased frequency, but difficulty and pain on passing urine ; pain referred to urethra.

No difficulty or pain on defecation.

17th.—Its general condition is improved. Temp. is down ; pulse not so rapid ; she perspires less.

*Vaginal Examination.*—Cellular ridge less painful on pressure, less pain and difficulty in micturition.

26th.—Is not so well. Evening, rise of temp.  $103^{\circ}$ . She suffers more abdominal pain ; line of swelling is raised half an inch, and the swelling is very painful. No pain in vagina or on micturition. Appetite improved. Bowels regular.

April 6th.—Patient is better again. Swelling in abdomen has original limits above and on each side, but it is less prominent, is harder, and not nearly so tender. There has been no vaginal discharge of any moment throughout.

*Treatment.*—Hot fomentations to abdomen ; a mixture of iron and spirits of chloroform.

*Diet.*—Chicken, beef-tea, milk, and port wine.

T.		T.		T.	
March 12	M. $103^{\circ} \cdot 2$	March 21	M. $98^{\circ} \cdot 8$	March 30	M. $100^{\circ} \cdot 6$
"	E. $103^{\circ} \cdot 2$	"	E. $102^{\circ} \cdot 2$	"	E. $102^{\circ} \cdot 0$
" 13	M. $101^{\circ} \cdot 6$	" 22	M. $99^{\circ} \cdot 9$	" 31	M. $99^{\circ} \cdot 7$
"	E. $103^{\circ} \cdot 6$	"	E. $100^{\circ} \cdot 8$	"	E. $102^{\circ} \cdot 4$
" 14	M. $101^{\circ} \cdot 8$	" 23	M. $98^{\circ} \cdot 4$	April 1	M. $100^{\circ} \cdot 1$
"	E. $108^{\circ} \cdot 4$	"	E. $101^{\circ} \cdot 6$	"	E. $102^{\circ} \cdot 4$
" 15	M. $100^{\circ} \cdot 2$	" 24	M. $99^{\circ} \cdot 9$	" 2	M. $100^{\circ} \cdot 6$
"	E. $100^{\circ} \cdot 6$	"	E. $103^{\circ} \cdot 0$	"	E. $103^{\circ} \cdot 6$
" 16	M. $99^{\circ} \cdot 0$	" 25	M. $98^{\circ} \cdot 7$	" 3	M. $100^{\circ} \cdot 1$
"	E. $100^{\circ} \cdot 2$	"	E. $102^{\circ} \cdot 0$	"	E. $102^{\circ} \cdot 8$
" 17	M. $98^{\circ} \cdot 6$	" 26	M. $102^{\circ} \cdot 4$	" 4	M. $102^{\circ} \cdot 2$
"	E. $99^{\circ} \cdot 6$	"	E. $103^{\circ} \cdot 2$	"	E. $103^{\circ} \cdot 4$
" 18	M. $101^{\circ} \cdot 1$	" 27	M. $100^{\circ} \cdot 2$	" 5	M. $98^{\circ} \cdot 6$
"	E. $101^{\circ} \cdot 0$	"	E. $103^{\circ} \cdot 6$	"	E. $101^{\circ} \cdot 8$
" 19	M. $98^{\circ} \cdot 0$	" 28	M. $100^{\circ} \cdot 4$	" 6	M. $99^{\circ} \cdot 5$
"	E. $101^{\circ} \cdot 2$	"	E. $103^{\circ} \cdot 6$	"	E. $103^{\circ} \cdot 4$
" 20	M. $101^{\circ} \cdot 0$	" 29	M. $101^{\circ} \cdot 6$	" 7	M. $99^{\circ} \cdot 8$
"	E. $102^{\circ} \cdot 4$	"	E. $102^{\circ} \cdot 6$	"	E. $101^{\circ} \cdot 8$



CASE IV.—*Pelvic Cellulitis—Pelvic and Iliac Abscess.*—

Mrs. M., aged thirty-six years, admitted February 27.

*Previous History.*—Patient has lived in poor circumstances in the country till three years ago, and since then in London.

*Menstrual History.*—Catamenia commenced when patient was fourteen. She was regular from the first, the period lasting about three days.

Married eleven years. Has had six children, all living; no miscarriages. The last child was born on December 5th, 1876. She was attended by a midwife, who, the patient says, was in a great hurry, and tore away the "afterbirth." Patient got up on the 14th day, but she had no unusual labour. On the third day she had a severe rigor; "she felt very cold, her teeth chattered, and the bed shook;" after this she became very hot, and perspired profusely. This was the only rigor patient had. Lochia continued normally. Milk was scanty. A week after patient got up she complained of pain in left groin, and pain on movement of left leg, so that at Christmas she only got about with difficulty and pain. Two weeks after this, January 7th, 1877, she noticed a swelling in left iliac fossa, which was very painful, at the same time the top of the thigh began to swell and feel very tender, and she was quite unable to walk. She was very feverish, and perspired profusely. Symptoms have got worse up to time of admission. Since patient first felt the pain in groin she has had an abundant offensive yellow vaginal discharge. This was only slight on admission.

March 1st.—*Present State.*—Patient is evidently in considerable suffering; left thigh is drawn up towards abdomen; left inguinal fold excessively tender to touch, and much swollen; swelling extends  $1\frac{1}{2}$  in. above Poupart's ligament, parallel with it from pubes to crista ilii. The swelling extends down thigh also for a distance of 8 inches from crista ilii and 3 in. from pubes. Fluctuation very evident from abdomen to thigh.

*Vaginal Examination.*—There is no distinct swelling to be felt, but on the left side of the uterus there is a slightly increased resistance on pressure by the finger, but no tenderness. Aspirator needle introduced by Dr. Graily

Hewitt, two inches below crista ilii, and about 3 oz. of pus withdrawn.

March 4th.—After aspiration, the swelling was reduced. It is now larger, softer, and more fluctuating than the original one. Great tenderness over outer part of thigh; the pus is burrowing downwards; skin over swelling is brawny, and pits on pressure.

Temperature keeps high (*vide Table*).

*Treatment*.—Poultices have been applied from the first. She is taking a mixture of ammonia and bark, and nourishing diet, and brandy 3 oz., port wine 4 oz.

10th.—Patient suffers much pain in her thigh. General condition as before. Skin above Poupart's ligament in two places is thinning. Thigh more swelled; excessively tender on outer aspect; fluctuation in thigh very evident; pus extends probably two-thirds down thigh.

12th.—Patient was placed under the influence of gas and ether, with the view of letting out the pus. When the patient became unconscious, three free incisions were made under the carbolic spray by the obstetric assistant, Mr. Burton, into what was now a large, soft, fluctuating tumour—one above Poupart's ligament, one behind the great trochanter of the femur, and the third at the lower limit of the swelling. Thirty ounces of yellow, inodorous, healthy pus were evacuated, drainage tubes being inserted into each opening; antiseptic gauze and dressing were then applied.

When patient came to she expressed great relief from the evacuation of the pus;  $\frac{1}{4}$  gr. of morphia was given hypodermically.

13th.—Thigh dressed this morning; free discharge from abscess cavity; pus sweet; swelling and pain of parts have almost disappeared.

20th.—Patient's general condition is much improved; appetite good; she is gaining flesh; temp. normal. Thigh has been dressed once every day; pus quite sweet, and less in amount; abscess cavity is closing fast.

April 5th.—Patient continues to improve; she is gaining health and strength. Temp. normal. Thigh is dressed every other day; discharge is sweet, and gradually decreasing

in amount. The lowest incision has healed the last ten days. Abscess cavity closing ; no bagging of pus. Patient is able to sit up in bed.

	T.	P.		T.	P.
February 27	E. 102°·0	120	April 8	M. 99°·9	120
" 28	M. 102°·6	136	"	E. 102°·6	
"	E. 103°·2		" 9	M. 99°·0	124
April 1	M. 101°·6	120	"	E. 102°·2	
"	E. 102°·2*		" 10	M. 100°·4	128
" 2	M. 103°·0	116	"	E. 102°·6	
"	E. 102°·4		" 11	M. 98°·7	124
" 3	M. 100°·3	104	"	E. 101°·6	
"	E. 101°·2		" 12	M. 99°·8	122
" 4	M. 100°·0	120	"	E. 102°·8†	
"	E. 101°·2		" 13	M. 98°·0	116
" 5	M. 100°·0	108	"	E. 98°·0	
"	E. 101°·2		" 14	M. 98°·4	116
" 6	M. 99°·6	112	"	E. 98°·2	
"	E. 101°·1		" 15	M. 98°·4	120
" 7	M. 99°·0	108	"	E. 98°·0	
"	E. 100°·4		" 16	M. 98°·4	
			"	E. 98°·2	

*Remarks.*—The preceding cases simultaneously under observation offered interesting and salient points for contrasting the onset, progress, and symptoms of the two affections, peri-uterine hæmatocele and pelvic cellulitis.

In the two cases first related the diagnosis was hæmatocele. In both cases the effusion followed exertion, the patient being just recovering from miscarriage. The great feature was the severe and suddenly occurring pain ; the negative feature, the absence of any great amount of feverishness consequent on the effusion. As regards the swelling itself, in the first case it was slight, so round and so closely surrounding the back of the uterus as to seem a part of it. In the second case it was very extensive. The precise seat of the effusion

\* Aspirator used.

† Abscess opened antiseptically.

was a little doubtful, but Dr. Graily Hewitt believed it to be extra-peritoneal in both cases.

The two cases of pelvic cellulitis which follow are characteristic. In both cases the inflammatory action was consequent on labour; in both, rigors marked the onset of the affection; in both, high fever set in, and was observed continuously; copious perspirations also were observed. Case III. (of cellulitis) and Case II. (of hæmatocele) were alike in respect to the shape and location of the effusion; but in this cellulitis case the effusion was more tender to the touch and less smooth on the surface. The contrast between these two cases as regards other symptoms was considerable.

The fourth case was a very severe one, but the issue most favourable. An abscess had formed close to the brim of the pelvis on the left side, extending down from that point under Poupart's ligament, and invading the whole of the upper part of the thigh on its front and outer aspects.

The value of the antiseptic method in the treatment of this case was most marked, not a single bad symptom following the free openings which were required to evacuate the extensive abscess which had formed as the result of the primary mischief in the left side of the pelvis.

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## NOTES ON A CASE OF RETAINED MENSTRUAL DISCHARGE

By A. E. AUST LAWRENCE, M.D.

Physician-Accoucheur to the Bristol General Hospital.

THE following case is one of interest, partly on account of its comparative rarity, but chiefly on account of its happy termination.

Briefly the case is as follows:—Lucy Cooksley, aged thirty-three, married, and the mother of two children, the last born fourteen months ago, presented herself in my out-patient room at the hospital on April 27th, 1876, complaining of great difficulty in passing water and great discomfort when the bowels acted; she also had a good deal of pain in the back



and thighs, and occasionally she suffered from pains of a forcing character, which she likened to labour.

Her previous history, which might throw light on her present state, was that she was confined at a workhouse fourteen months ago, and had what she termed brain fever, and was in bed for two months. She had not menstruated since, nor had she lived with her husband since her confinement.

Upon examining the abdomen, I noticed a fulness in the supra-pubic region extending from the upper part of the symphysis, two inches upwards towards the umbilicus and one inch and a half each side from the median line; this fulness and indistinct feeling of tumour, one might call it, diminished to about one half upon emptying the bladder, still leaving a more or less firm swelling which could be felt above the pubes.

Upon making a vaginal examination the following condition was noted:—Vagina narrowed in places by bands of cicatricial tissue, stretching obliquely from the anterior to the posterior wall; these bands did not prevent the finger from passing easily up the canal, the upper part of which was drawn into a cone, and at the apex of this was felt a small portion of hard tissue, about as big as a horse-bean. When pressure was made by the finger upwards in the roof of the vagina it encountered almost everywhere a more or less dense body, which appeared fixed in the pelvis. There was no trace of cervix uteri to be felt, and no opening or depression to indicate the situation of the os uteri, and the only place where anything like uterine tissue could be felt was the small hard nodule already mentioned. A certain amount of pain attended the examination, but with the exception of the difficulty of passing water and evacuating the contents of the bowels there were no very urgent symptoms present.

I now had to consider what her condition was, and I had the following points to aid me. Evidently she had had an attack of pelvic cellulitis and peritonitis, as a certain amount of fulness over the pubic rami and in the pelvic cavity indicated; also she had suffered from a good deal of uterine inflammation, especially of the cervix uteri, which was obli-

terated as far as regards its vaginal part, and the os uteri was entirely closed ; the raphe of the buttocks evidently had been raw, as it was covered with dense cicatricial tissue with bands bridging it over. After passing through my mind various conditions, I came to the conclusion that her state depended on one of three causes :—

1st. Menstrual retention from occlusion of the os uteri externum.

2nd. Retroversion of a gravid uterus.

3rd. Pelvic cellulitis, including in this one of its causes, hæmatocele.

In favour of the first, I had her present condition. No apparent outlet from the uterus and the history of no menstrual excretion, although I fancied her history of pain and trouble was to a certain extent periodical, and therefore I considered I had a suspicion of menstrual secretion.

Against the second possible cause, I had her assertion that she could not possibly be pregnant ; but in favour of this cause I had apparently an enlargement of the uterus and many symptoms of retroversion of the gravid uterus.

It was impossible to absolutely exclude the third condition, as there were many direct evidences of pelvic cellulitis having existed, and it was just possible that a certain amount of the pelvic tumour might be due to its effused products.

As there were no very urgent symptoms I requested that the bladder should be emptied by catheter twice daily, and an enema given to relieve the bowels. I did not see her again for a week, as I went to London for a few days ; but on my return I found her condition altered, owing I believe to the accession of another menstrual period. I learnt that she had been in great pain for two days, and on examining her abdomen I found the swelling had risen nearly half way up to the umbilicus ; and it felt quite tense, in fact, like a contracting uterus. By the vagina I ascertained that the tumour was more central, and one could get an indistinct feeling of fluctuation, if one might use the term here, by pressing upwards with one finger in the vagina and one hand on the abdomen.

I now considered her in great danger, from the following causes :—

1st. Rupture of the uterus, if it was a case of pregnancy or menstrual retention.

2nd. Escape of fluid from the uterus through the Fallopian tubes, if it was a case of menstrual retention, and this setting up or aggravating the pelvic inflammation.

I at once had her removed carefully to the operating-room, with the view of ascertaining the exact contents of the tumour. I placed her on the left side, and drew back the perineum with a Sims's speculum, and, guided by the finger, I passed an aspirator needle through the bit of hard tissue in the apex of the vagina, which I have already referred to ; the needle was directed midway between the rectum and the bladder, and passed upwards and forwards for about two inches, when the sense of resistance was lost and I felt that I was in a cavity. The pump of the aspirator was now used, and I had the pleasure of recognising blood of the dark treacly nature so characteristic of retained menses. I now decided to try and avoid the many dangers of these cases. The first danger which often occurs in these cases is, that when a certain amount of fluid is withdrawn the uterus acts violently, and causes some fluid to be thrown into the peritoneal cavity and tears any adhesions. I considered this best avoided by making a small opening into the cavity of the uterus, and this I did by withdrawing the aspirator needle and passing a small-sized trocar and canula ; through the latter the fluid drained slowly off. The amount of fluid I estimated at about twenty to twenty-five ounces. While it was draining off I had firm pressure kept up over the uterus, and when the fluid had ceased flowing of its own accord I washed out the uterine cavity with warm Condyl's fluid and water until there was no trace of blood in the returning fluid. In washing out the uterus I was careful to inject the Condyl in very small quantities at a time, and allowed it to escape freely, as I wished to avoid the danger of any passing through the Fallopian tubes, and this was easily accomplished owing to my having used a moderate-sized trocar. After the uterus had been washed out, I passed a piece of drainage tube in to

keep open the new canal ; a pad over the uterus and binder were applied, a dose of ergot given, and the patient was put to bed.

The following morning I removed the tubing and passed a No. 10 gum elastic catheter, and washed out the uterine cavity, the returning fluid bringing with it several pieces of thick blood. This process of washing out the uterus was done night and morning for the first three days, and then every morning for another three ; after this the injections were discontinued, as the discharge had ceased. In the course of a day or two, as the sound did not pass readily, I dilated the new cervical canal with a sea-tangle tent and placed in the canal a stem pessary, and ordered her to have a mixture composed of ergot, bromide, and iodide of potassium, with decoction of bark. Her progress from this date was everything that one could desire ; she soon lost her nervous condition and all the reflected pains she had suffered from for months, and she has gained what to her is a great boon—viz., freedom from pain at her menstrual periods, which for some years was so distressing to her. She now menstruates regularly and without any pain, and the sound can be passed easily in the normal direction about three inches from the artificial os uteri. Her pain at the catamenial periods was due, I expect, to a narrow cervix, which the operation has remedied.

On looking over the history of some cases on this condition recorded in the different journals, I find blood poisoning has been the cause of death in a certain proportion, and this I think is best obviated by washing out the uterine cavity.

Another cause of death has been peritonitis, from the uterus throwing a portion of its contents into the peritoneal cavity and tearing through adhesions, and this I think is best met by making a free opening for the fluid to drain away. At all events, in this case the conditions I have mentioned were combated successfully by the plan I have detailed, for from the day of operation till she left the hospital she had not a single bad symptom.



## General Correspondence.

(To the Editor of the "*Obstetrical Journal*.")

SIR,—In the March number of your journal I notice a communication from Dr. Robert Battey, Rome, Georgia, U.S., wherein the writer magnanimously interposes himself between my "innocent head and the obloquy of the British profession." I hasten to acknowledge his disinterested kindness, and beg to assure him that I would have willingly put part, or the whole, of the *onus* upon him had I known that he had performed the operation when I made my own. At that time, and for weeks afterwards, I was not aware that any similar operation had ever been performed or reported, and I shall willingly withdraw any claim to priority if Dr. Battey will show that his cases were published previous to my operations.

I am, dear Sir, yours, &c.,

E. H. TRENHOLME.

Montreal, March 29th, 1877.

[We have Dr. Battey's first pamphlet on the subject, reprinted from the *Atlanta Medical and Surgical Journal* for September, 1872, Professor Trenholme's operations having been performed in January, 1876. Dr. Battey has therefore a just claim to priority, although Professor Trenholme was led independently to perform the same operation. Professor Trenholme, however, seems to have been the first to remove the ovaries in a case of large fibroid tumour, an operation which may have an important future as an alternative to the far more dangerous operation of removal of the whole uterus with the ovaries.—ED.]

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## Abstracts of Societies' Proceedings.

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### OBSTETRICAL SOCIETY OF LONDON.

*Meeting, April 4th, 1877.*

DR. WEST, *President, in the Chair.*

The following gentlemen were elected Fellows of the Society:—M. McWilliams Bradley, M.B. (Jarrow-on-Tyne); William Eddows, M.R.C.S. (Shrewsbury); H. W. Maunsell, M.D. (Melbourne); Robert Ostler, M.B.; Richard Paramore, M.R.C.S.; and William Wigmore, M.R.C.S.

Dr. ASHBURTON THOMPSON introduced two children, the subjects of deformities. In the first were a supernumerary pair of mammæ, and a scar-like mark on the top of the head; in the second was observed in the median line, a little above the upper end of the sternum, a small pedunculated growth, immediately below the pedicle of which was situated a small orifice leading into a short canal lined by mucous membrane. These cases illustrated the alleged effect of maternal impressions. In the first child the supernumerary breasts were attributed by the mother to her having, in the fifteenth week of pregnancy, taken a friend to the hospital, and having seen her breast, which was the subject of disease, manipulated. The mark on the top of the head was supposed to be due to her having, in the twenty-first week of pregnancy, seen a horse killed with a pole-axe. The deformity in the second child was attributed by the mother to her having, in the seventh month of pregnancy, been startled by a man who came to her door, made strange noises without speaking, and then pointed to a tracheotomy tube in his throat.

Dr. BOZEMAN, of New York, exhibited his instruments for the treatment of vesico-vaginal fistula, and atresia vaginæ, when complicating that condition. He said that incisions and dilatations in cases of atresia had been made use of from a very old date, but without much success. Jobert was the first who proposed divisions of cicatricial bridges, and was very successful in ordinary cases. He himself first began to treat these conditions in 1855. His first case was that of a young woman, aged twenty-three, in whom there was an almost complete closure of the vagina with three fistulæ. He decided to treat the case like an ordinary stricture of the urethra by incisions and dilatations, preferring the soft form of dilators. He then closed the fistulæ by Sim's clamp suture, but the operation proved an utter failure. The idea of his new button suture then occurred to him. From that time he had dilated the vagina in all cases of difficulty. Another case came before him in which there was an opening scarcely admitting a probe. He dilated the vagina gradually to the fullest extent, and found that two fistulæ existed. These he closed by his

new suture with complete success. In the course of three years he cured from forty to fifty cases. Soon after he began to have more difficult cases sent to him, in which there was infiltration of the vagina on all sides, including its posterior wall. He was then led to construct his speculum for the purpose of reading a fistula, when situated high up. The blades being hinged by long arms on a pivot at some distance outside the vulva, there was a free field for the operator. It was expanded by a screw which acted on the principle of the parallelogram of forces, the power being increased as the resistance increased. The largest size was used for openings high up; the smallest, with short blades, for very large openings. There was another form, with a third posterior blade to insert between the two lateral blades, in order to dispense with an assistant.

He found the most efficient dilators to be pieces of sponge, enclosed in bags of waterproof taffetas de soie. This was superior to oil silk or gutta-percha skin, not being acted on by the urine. The water could be squeezed out of these dilators, so as to make them very small, and they could then be insinuated through very small openings. A model was shown representing his operating chair, and the method in which the patient was fastened upon it in the prone position, the thighs being vertical, and secured to uprights, and the chest and head supported. The head-rest was hinged, so that it could be dropped to any angle, and a strap across the back prevented any movement of the patient. By its means the administration of an anæsthetic in the prone position was rendered easy. In the knee-elbow position this was dangerous, and he had seen a patient die under chloroform in that posture.

The PRESIDENT here inquired whether there was not the same risk from pressure on the chest with Dr. Bozeman's chair.

Dr. BOZEMAN said that the safety consisted in the pressure of the abdominal contents being taken off from the diaphragm. Within ten years he had used it at least 200 times without any accident, and in several cases the anæsthetic had been continued for more than four hours. The button suture invented by him he had now used for twenty-two years, and he had the greatest confidence in it, especially in cases complicated by atresia. It consisted of a thin plate of lead, moulded to the shape of the parts, through which the wire sutures were passed, and secured by a shot. It not only acted as a splint, and relieved tension, but protected the edges of the wound from the discharges.

The report of the sub-committee on Dr. Palfrey's specimen of two-headed monster was then read. The heads and necks were distinct. The common body had two normal arms. There was a third made up of two arms fused, the hands being separate. There was a single uterus. The inner surface of the right head was much flattened. The two heads together measured six inches across their greatest diameter, and therefore could not possibly have been delivered parallel. The left head could easily be placed at a lower level than the

right, and probably they had passed in this way. They could readily be so drawn through a dried pelvis.

Dr. PLAYFAIR remarked that the child was just on the point of being born alive, and, if it had been, we should have had a living monster more curious than any extant or on record. He quoted a curious historical case of a monster which became hall-porter to James V. of Scotland. A child having been born with two heads, it was taught to sing in parts, treble and tenor, and to speak several languages. The two heads discovered different tastes, and would sometimes quarrel. It lived to the age of twenty-eight, when one head died some days before the other and putrified.

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*On Fibroid Tumours Complicating Delivery.*

By W. S. PLAYFAIR, M.D., F.R.C.P.

The paper consisted of the relation of three cases in which this complication was present, in two of which but little effect on the course of labour resulted. The first case was that of Mrs. W., aged thirty-four. In May, 1870, having previously been healthy, she first felt a hard globular lump, which proved to be a fibroid tumour. During the next year it increased in size and gave more discomfort. Towards the end of the year she began to have difficulty in micturition, and was seen by Dr. Arthur Farre and Mr. Spencer Wells. In February, 1872, Dr. Farre passed his entire hand into the vagina, and pushed the tumour up out of the pelvis. The bladder symptoms were then relieved, but the tumour grew faster, and, according to the patient's account, it reached to close under the ribs. In February, 1873, she married, and immediately became pregnant. From the fifth month she was kept on the sofa, the slightest movement bringing on pain. Prominent masses were felt projecting from the fundus, and one, the size of an orange, in front of the cervix. The pelvis otherwise was clear. Labour came on on November 21st, and was completed naturally two hours after the rupture of the membranes. Great care was taken to secure contraction of the uterus, and no hæmorrhage occurred. Next day the fundus uteri was 12 inches above the pubes, but six months later no fibroid masses could be discovered, and there only remained some small nodules to be detected by bi-manual examination. Shortly after she went to China, and pregnancy again occurring, the tumour reappeared. She returned to be under Dr. Playfair's care for her confinement, which again took place naturally. A mass at one side of the fundus was found, and this time has not disappeared after delivery, but is much less than the original tumour. The author's former paper, in which he had collected cases in which fibroid tumours had disappeared by absorption, had been received with some incredulity, but since then various other authentic cases of the kind had been recorded. The present



instance appeared to be one of those in which the process was analogous to, and promoted by, involution of the uterus.

The second case was a patient of Dr. Macrae. Two globular masses of the size of a cocoa-nut were felt at the fundus and side of the pregnant uterus. There was no delay in the first stage of labour, but in the second the pains were feeble, the case not differing from an ordinary one of powerless labour. A living child was delivered by forceps, and there was no post-partum hæmorrhage. Six months afterwards the presence of fibroids could with difficulty be detected, as reported by Dr. Macrae. Post-partum hæmorrhage in such cases appeared to be less common than one might expect. It occurred in a case of Goodell's, but in three related by Dr. Madge and Dr. Copeman there was none, and Magendie agrees in this experience. In submucous fibroids, which would most predispose to hæmorrhage, pregnancy is generally prevented.

The third case was a multipara, a patient of Mr. Burton, of Blackheath. She had had five children, the last five years ago. Meanwhile her health had been fairly good: she had had some menorrhagia, but not excessive. Labour commenced at 1 P.M., and the membranes ruptured at 4 P.M. A large fibroid was then discovered, filling the pelvis, and jammed down in front of the foetal head. The author, being sent for, found that the tumour appeared to grow by a broad base from the posterior uterine wall. Two fingers could be passed with difficulty in front of it, the remaining diameter being barely  $1\frac{3}{4}$  inches. He considered that delivery through this space would be more hazardous than with the same space in a bony pelvis, since half of the mothers die when an ovarian tumour is in a similar position, and cannot be lessened by tapping. He would have tried to turn before resorting to Cæsarian section, since Dr. Copeman had been successful by that means in a similar case. First, however, it was resolved to push up the tumour if possible. The doubled left fist being passed into the vagina, very powerful pressure was exercised at intervals, greater force being used than would have been justifiable if the alternatives had not been so dangerous. At length the bulk of the tumour was got up above the promontory of the sacrum. He would have turned if possible at this stage, but could not venture to remove his hand from the tumour. Keeping it pushed back, he applied forceps, and a single traction brought the head through the brim. The alternative of enucleation was in this case out of the question. It was only applicable when the tumour was limited and encapsulated with a narrow attachment. The lesson to be learnt was that a very determined attempt at reposition should be made before more desperate measures were resorted to. There was in this case very evident risk of rupture of the uterus, since there was an insurmountable obstruction, and the tissues were probably weakened by the presence of the tumour.

Dr. BARNES said that the contribution of Dr. Playfair was a valuable one, but did not exhaust the relations of fibroid tumours to

pregnancy. In some cases there was no bad effect. This was when the tumour was near the fundus and *above* the foetus. One case of this kind he had attended in three labours. The tumour could be grasped by the hand, and did not vary much. Another he had seen in two pregnancies. The tumour was at the fundus, but embedded and probably intramural. Other similar cases he had also seen with no ill results. But from a tumour projecting into the cavity of the uterus there was enormous danger which could not always be averted. He had seen such a one with Dr. Murray, and the woman died from rupture of the uterus. The danger was still greater if the tumour was in the lower segment, even if the labour was easy. Slow necrosis might occur, and there was a liability to septicæmia, the tumour being more liable to injury than the proper uterine tissue. In other cases of large polypoid masses, sloughing took place, generally followed by death. In some instances the supposed atrophy or absorption may have been really the sloughing away of the tumour, but no doubt in some instances pretty complete atrophy did occur. In a former paper he had related two cases of such atrophy after labour, in which the process was watched from day to day. Post-partum hæmorrhage was a very serious danger, but its occurrence depended upon the seat of the tumour. The injection of perchloride of iron was the proper remedy, since equable contraction of the uterus could not be obtained.\* The undoubted rule was always to push the tumour up, if possible. He had recently seen a lady, married eight or nine years before, who had amenorrhœa for three months, and was suffering from retention of urine. A large tumour was found blocking the pelvis posteriorly, and could not be pushed up. A few months before there had been no obstruction to coitus, and therefore the growth must have been rapid. Enucleation was too dangerous to contemplate, since part of the tumour was above the brim. Septicæmia had commenced, and there was constant vomiting. Gastrotomy was performed, and two large uterine tumours were found, which could with difficulty be dragged out of the pelvis. The uterine cavity was between the two, and contained a flattened three months' foetus. The whole mass was taken out, and bleeding arrested by the thermo-cautery. Vomiting ceased after the operation, but the patient sank in thirty hours.

Dr. BRAXTON HICKS said that not only small but also large tumours opposing labour might be removed when situated in the lower segment of the uterus. He had removed successfully by enucleation a mass as large as a foetal head and a half, which blocked up the whole antero-posterior diameter of the pelvis, and reached as high as the level of the bladder in a pregnant woman. Some cases which appeared unpromising in early pregnancy improved during the course of gestation so as not to give any trouble. Fibroids, even when in the lower segment, might go up as the uterus enlarged. The great question was whether to induce premature labour, and at what stage.

Dr. GODSON mentioned a case lately in St. Bartholomew's Hospital. Delivery was obstructed by a fibroid in the anterior wall, and was effected by version. Afterwards profuse discharge occurred and fibrous masses came away. At the end of nine or ten weeks the whole tumour had disappeared.

Dr. MURRAY had seen relief to the bowels brought about by pressing the tumour from the pelvis by means of the hand introduced into the rectum.

Dr. J. WILLIAMS mentioned a case which he had published some time ago. A woman, who had had eight or nine children, had a tumour above the brim on one side, complicating pregnancy. She was very fat and the tumour felt soft. Puncture with the aspirator however showed that it was not cystic. Delivery was readily effected by version, but the child was still-born. Very little hæmorrhage occurred, but in ten days a huge fibroid mass was passed, weighing nearly one pound. The uterus remained large but uniformly so. In a case now under treatment by ergotin, not only shreds of mucous membranes but fibroid pieces, not sloughed, were passed at the menstrual periods.

Dr. DE GORREQUER GRIFFITH had seen three cases of this complication, two without a bad symptom, the third complicated by post-partum hæmorrhage. During gestation the tumours increased, afterwards diminished in size.

Dr. HAYES referred to a case in which death took place from hæmorrhage before delivery. A fibroid about the size of a Tangerine orange, which was easily enucleated after death, was found in the anterior wall of the cervix. Placenta was not prævia.

Dr. EDIS mentioned a case in which retention of urine was produced by a fibroid tumour blocking the pelvis. In the genu-pectoral position he pushed the tumour above the brim. The bladder symptoms were relieved, but the tumour was increasing.

The PRESIDENT said that it was agreed that the first thing to be tried was to push the tumour above the brim. It was still doubtful what was to be expected from the influence of the tumour on the puerperal condition. It used to be thought that the danger was always very great, but his own experience did not quite bear this out. He had observed absorption after delivery in two cases, both of pedunculated tumours. The chief questions for future examination were the following:—1. In what form of tumour is absorption most likely? 2. When may this take place without great hazard to the patient? 3. The mode of distinguishing whether severe results were to be expected in case of pregnancy and labour, especially with reference to the advice to be given as to the question of marriage. 4. Is there any means in the non-pregnant state of setting up a process analogous to involution?

Dr. PLAYFAIR replied, saying that he recognised the theoretical probability of post-partum hæmorrhage in these cases, but it did not appear to be quite so common in practice.

## OBSTETRICAL SOCIETY OF EDINBURGH.

*Meeting, January 10th, 1877.*Professor SIMPSON, *President, in the Chair.*

Dr. MATTHEWS DUNCAN exhibited a recent specimen of "siren foetus," which had been presented to him by Dr. Cran, of Salford, Manchester. It was at or near the full time, and about  $13\frac{1}{2}$  inches long. No appearance of sexual apparatus externally. The limb reversed; the patella large and broad. Below the knee there were two inches of further limb, ending in a rounded blunt point.

Dr. UNDERHILL exhibited a "celosome foetus." The anterior wall of the abdomen was wanting, and the entire abdominal viscera were protruded, being only covered by the thin amniotic sheath of the umbilical cord. There were no indications of sex to be made out. At the bottom of the spine was a large hydrorachitic sac. The legs were turned round so as to lie along the back with the heels reaching to the head. The right foot was in a state of talipes varus, the left showed talipes valgus. The specimen had been sent to him by Dr. J. R. Morrison of Hartlepool. The foetus appeared to be nearly at the full time. The head, upper extremities, and chest appeared to be well formed and natural. Dr. Underhill intended to have a careful dissection made of the preparation, and would report the result to the Society.

Dr. KEILLER had met with a similar case in which the tumour presented, and was mistaken for the placenta.

Dr. KEILLER showed an "abortion" of six weeks.

*On some of the Relations of the Foetal Head to Rupture of the Perineum and Injuries of the External Genital Organs.*

By J. MATTHEWS DUNCAN, M.D.

In a former paper on Perineal Rupture, I discussed\* some of these relations, but I now wish to enter upon the subject more fully.

While the passage of the foetal head through an ordinary contracted pelvic brim has been carefully studied, and many of the mutual influences well made out, the same cannot be said of the passage of the foetal head through the vaginal and then through the vulvar orifice. In important respects the former passage is an easier and simpler subject of study than the latter, and there is in consequence a contrast between them. The passage through the brim is the forcing of the globose head through a passage contracted at one part. The passage through the vaginal and vulvar orifices is through an obstruction which is circular, or nearly so, and acts at every part. The passage through the brim is therefore a matter affecting one

\* *Obstetrical Journal*, April, 1876, p. 40.



diameter of the foetal head, or a single series of diameters of nearly the same name, extending in a nearly vertical line from above downwards on the foetal head. The passage through the vaginal and vulvar orifices affects a circumference or circumferences of the head, embraced, as it is, all around by the opposing undilatable margins of the orifices. In the passage through the brim, the head has to suffer and be moulded, while the resisting parts are practically unyielding, and may be regarded as unaffected. In the passage through the vaginal and vulvar orifices the head has to suffer to some extent, and be moulded slightly, but the resisting parts are much more moulded, and must yield or be lacerated.

The passage of the foetal head through a generally contracted pelvic brim has more likeness to the passage through the vaginal and vulvar orifices than has the passage through an ordinary contraction affecting the conjugate diameter chiefly. In both of the former cases the whole circle of the aperture, or nearly the whole, resists the advance of the head. In both, and for nearly the same reasons, the head advances or is forced onwards in that way in which it passes most easily; that is, with one end of the long diameter of the oval head coming first; or, with the posterior triangular fontanelle, or some part near it, forming the presenting point.

The foetal head does not come through the vaginal and vulvar orifices simply or exactly in the line of direction of its long axis. That is prevented by the connexion with it of the neck, which forbids the amount of flexion-like movement that might occur if the neck and body were imagined to be absent. Besides, in consequence of the presence of the neck of the foetus, and from the construction of the passage, the head follows the line of the so-called circle of Carus; not a straight course, even at its moment of emergence from the genital canal. With its suboccipital region pressed against the middle of the pelvic arch, and advancing slowly, wheeling around a point somewhere about the centre of the symphysis pubis, the region of its vertex is advancing rapidly in a larger circle, wheeling around the same point, and distending the perineum to its utmost.

With regard to the mechanism of distension, the following diameters have chiefly to be considered: the suboccipito-vertical, the suboccipito-bregmatic, and the suboccipito-frontal. The suboccipito-vertical diameter passes through the plane of the parietal tuberosities, and reaches the sagittal suture about  $\frac{3}{4}$  inch behind the centre of the anterior fontanelle; it measures about  $3\frac{1}{2}$  inches; and its corresponding circumference passing over the parietal tuberosities measures about  $11\frac{1}{4}$  inches. The suboccipito-bregmatic diameter passes from the suboccipital region at a point a little nearer the nucha than the former, and reaches the middle of the anterior fontanelle in a line joining the limbs of the coronal suture: it measures about 4 inches, and its corresponding circumference measures about  $12\frac{1}{2}$  inches. The suboccipito-frontal diameter passes from the suboccipital region at a point a little nearer the

nucha than the former, and reaches the most prominent part of the forehead at the frontal suture, about an inch in front of the centre of the anterior fontanelle or the middle point of a line joining the limbs of the coronal suture; it measures  $4\frac{1}{4}$  inches, and its corresponding circumference is about  $12\frac{3}{4}$  inches. These various figures are not taken from a sufficiently large number of newly-born children to give them value as averages, but their value, when used in comparison one with another, is evident. They may be given in a tabular form, thus—

Suboccipito-vertical diameter	$3\frac{1}{2}$ inches,	in circumference,	$11\frac{1}{4}$ inches.
Suboccipito-bregmatic	„ 4 „	„	$12\frac{1}{2}$ „
Suboccipito-frontal	„ $4\frac{1}{4}$ „	„	$12\frac{3}{4}$ „

Every practitioner supporting the perineum during the birth of the head must frequently have observed that it has retained its entirety until the projecting forehead came on, and this lacerated it. Now, this is easily explained by the above table of measurements, for it is not till the suboccipito-frontal diameter is passing that the perineum is stretched to the utmost. The suboccipito-vertical and suboccipito-bregmatic diameters may both pass over the perineum without tearing it, and then the large suboccipito-frontal may lacerate it on account of its greater dimensions. No doubt the suboccipito-bregmatic or the suboccipito-vertical diameter may tear the perineum, or even an earlier passing part; and in this case the tear may be extended and extended, as each larger part follows, till the largest suboccipito-frontal emerges, completing the injury done.

The order in which all the lacerations of the external genital organs take place I cannot decide, but the following statements are either self-evident or nearly certain.

Before the suboccipito-vertical diameter has passed the vaginal opening, or even when only a caput succedaneum protrudes, the vaginal orifice is lacerated posteriorly. The laceration increases as the head advances.

While the parietal protuberances pass through the vaginal and vulvar orifices, they may lacerate one or both sides of the vaginal orifice or of the vulvar orifice.

The vestibular lacerations take place before the suboccipito-frontal diameter has passed the vulvar orifice. Their occurrence helps to save the perineum from laceration.

A laceration of the fourchette may take place early in the passage of the head.

An extensive laceration of the perineum (say three-fourths of an inch or more) obviates tension of the vaginal and vulvar orifices, and therefore prevents further laceration after its occurrence.

The perineum is the part last lacerated.

Cases of ordinary or characteristic central perineal rupture, in which the head advances in its natural way, and is born through the vaginal and vulvar orifices, and, still better, cases of incomplete central rupture, such as I have recorded in a former paper, require special con-

sideration. They show nearly with certainty that the anterior part of the perineum is in some cases, including themselves, considerably more extensible than its middle or posterior part; for in them the anterior part or a portion of it (it may not be the most anterior part or fourchette) remains entire, while the suboccipito-frontal diameter passes over it, and after the middle of the perineum has given way under the distension by the same diameter of the foetal head.

In the cases of complete central rupture which I have seen there were two perineal ruptures; first, of course, the central rupture; and, second, an ordinary rupture of the fourchette or anterior part of the perineum. Between them, in the most characteristic cases, but not in every instance, there is an entire strap or bridge of skin unhurt. No doubt the unhurt bridge or isthmus of skin may, in some cases, be absent, and the two distinct ruptures be confused in one. Whether this be the case or not, it is to be remarked that both tears may go on simultaneously, and so rapidly that the observer may be unable to distinguish their separate occurrence. While the suboccipito-vertical or even a smaller circumference is distending, and, it may be, tearing the vaginal and vulvar orifices, the hitherto entire middle of the perineum may be at the same time suffering central rupture by the great advancing suboccipito-frontal circumference. The middle of the perineum may have endured dilatation by the suboccipito-vertical and suboccipito-bregmatic circumferences which have advanced to lacerate the vaginal and vulvar orifices, but cannot endure further distension by the suboccipito-frontal, which therefore tears it, and may yet pass over some of the anterior part of the perineum without destroying such anterior part.

Having discussed the injuries of the perineum produced by the passing foetal head, we have now to devote attention to the injuries of the foetal head, caused by the resisting perineum; for it may be held as quite certain that every obstacle or modification of resistance to the advancing head leaves its mark upon it. In the case of difficult passage through the pelvic brim, the changes or injuries are often well marked, and have been carefully studied, with great advantage to the progress of obstetrical science. But the vaginal and vulvar orifices and the perineum also do in like manner produce their peculiar capita succedanea, equitations of bones and shears; and they demand more careful study than has yet been accorded to them. In the meantime I can only enter upon some general views.

The caput succedaneum of the vulvar orifice, or of the end of the second stage of labour, I have already elsewhere described.\* That the perineum and vaginal and vulvar orifices may by their undilatability lead to equitation of bones there is no doubt, but I have not studied the subject so as to enable me to describe any peculiarity in such overlapping. In regard to the shear produced by the forcing of the head

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\* "Contributions to the Mechanism of Natural and Morbid Parturition," &c, 1875, p. 235.

over a perineum, and through a vaginal and vulvar orifice difficult of dilatation, it may be stated that the lateral or antero-posterior part of the ordinary shear\* is in great measure due to the resistance of these parts.

The mortality of male children in birth, and shortly after it, is greater than that of females. Males more frequently demand artificial assistance in delivery than females. There is no doubt that both these evil conditions are in part owing to the greater size of the male head, and the consequent need of more dilatability and more actual distension of the perineum and vaginal and vulvar orifices than is required by females, circumstances which imply greater injury of the foetal heads of males.

It has been shown that the part of the foetal head which most distends the perineum and vaginal and vulvar orifices is that generally called the suboccipito-bregmatic diameter or circumference (including the suboccipito-vertical, suboccipito-bregmatic, and suboccipito-frontal diameters or circumferences of this paper). Hence it should be expected that the suboccipito-bregmatic diameter should show evidence of special compression, and this has been admirably done by Budin.† His measurements were made to show the amount of resili- tion gradually effected within about two days after delivery, giving thus a satisfactory indication of the amount of compression during birth. "The augmentation (says he) of the suboccipito-bregmatic diameter has been constant (in all his fifty-two cases measured); this augmentation has been almost always very considerable, and has amounted even to twelve mms. The suboccipito-bregmatic diameter is, in fact, that which increases the most after delivery."

In accordance with what has been stated in this paper regarding the suboccipito-frontal diameter or circumference I have no special measurements to adduce in evidence, but I daresay every one will be prepared to believe in its particular diminution during labour, for the lowness of the forehead in a much-compressed head is well known to accoucheurs, and is often a horrid sight to the parents ignorant of its temporary character. But in regard to the suboccipito-vertical diameter or circumference, I have valuable measurements by Budin to adduce, whose evidence quite supports the line of demonstration pursued in this paper. As already stated, the parietal protuberances are embraced in the suboccipito-vertical circumference, and Budin's measurements indicate the amount of diminution of the biparietal diameter, which is one measure of the suboccipito-vertical circumference. Budin describes, and his measurements show the bitemporal diameter, which corresponds to the suboccipito-bregmatic proper, more diminished during labour than the biparietal. Or, to use his own words, "The biparietal diameter

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\* "Contributions to the Mechanism of Natural and Morbid Parturition," &c., 1875, p. 216.

† "De la Tête du Fœtus au point de vue de l'Obstétrique." Paris, 1876, p. 67.



also augments after delivery, but this augmentation is not constant; it is by much the least considerable: in fifty-two cases, two times only has it amounted to five mms., once to six, and once to seven mms."

If the argument of this paper is correct, then there should be a great difference between the foetal heads of primiparæ and those of multiparæ. The greater injuries of the perineum and external genital organs in primiparæ than in multiparæ should be correspondingly reflected in the heads of the foetuses born in primiparæ and in multiparæ. And so it is. The mortality in birth, and shortly after it, of children born of primiparæ, is greater than of children born of multiparæ. The heads of the children of primiparæ are more deformed by labour than those of multiparæ. Budin, our best authority on this point, writes as follows:—"That this resistance of the soft parts—and Professor Depaul, following M. Dubois, insists strongly on this point—that this resistance of the soft parts causes, during labour in primiparæ, a longer duration of the period of expulsion, is a fact about which there can be no doubt. From it there results also a more marked deformation of the head. The figures which we have given, and which show considerable modifications in the form of the cranium, are all the consequence of deliveries in primiparæ. In multiparæ, on the contrary, the deformations are much less remarkable, and often are almost absent."

Here I must draw to a close, with the remark that the subject is well worthy of further elucidation and description. Of two sets of facts I feel special want—namely, a statement of the actually observed injuries produced by the birth of males, as compared with those produced by the birth of females; and a statement showing comparatively the injuries produced in head last cases and head first cases. The matter is one not of so easy solution as it may at first sight seem, for mere great number of injuries may be made up for by severity in the smaller number. One serious laceration may be more important than several small ones. Besides, one deep laceration may act as a preventive of several smaller.

Dr. KEILLER thought Dr. Duncan's paper a most valuable one, and being based on personal observation and facts, none of the statements brought forward could be questioned. In practice he had found the difficulty and labour required to make such investigations as those of Dr. Duncan. He was surprised at the frequency of perineal and other tears, yet had not hitherto considered that internal lacerations were so common as now, from Dr. Duncan's paper, he believed them to be. It had often occurred to him that possibly these lacerations were more common and extensive in hospital than in private cases, on account of the frequency with which examinations were made in hospital as compared with private practice. This was an interesting point, and one he would like to have settled. In

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\* "De la Tête du Fœtus au point de vue de l'Obstétrique." Paris, 1876, p. 70.

regard to Dr. Duncan's last paper, he thought it also a very valuable one. In his experience, the greater the diameter of the foetal head, the more probability of rupture. In forehead presentations he had frequently found rupture, and that generally central. Lacerations, he found, often began before the head had actually passed. Tears in the generative parts were very common in the lower animals during labour, more especially in the case of the cow. These were no doubt, in some cases, the result of the force used in effecting delivery. He could not close his remarks without referring to the extreme importance of these lacerations in their tendency to give rise to many post-partum pathological conditions.

Dr. MILNE asked a question, to which Dr. Duncan replied in the negative, as to whether in any of his cases there had been after bad results. He was surprised at the frequency of these lacerations as detailed by Dr. Duncan, and was inclined to think that they must be more common in hospital cases, and from avoidable causes. He did not think that these lacerations were at all likely to produce fever or other morbid states after delivery, and was decidedly of opinion that the frequency of such cases was over-estimated. He did not think the forceps caused laceration, but, on the other hand, frequently prevented it.

Dr. UNDERHILL remarked that two important points were brought out most distinctly in Dr. Duncan's first paper; first, that in primiparæ the fourchette frequently escaped laceration—indeed, it escaped in about half of Dr. Duncan's cases. This was contrary to what is commonly taught in text-books and elsewhere, and served, he thought, to confute the argument of Dr. Keiller and Dr. Milne, that the large number of lacerations reported were due to officious interference on the part of house-surgeon or nurses; for less than was to be expected of ordinary perineal tears, such as are usually the only ones looked for, were found. Secondly, the great number of lacerations of other parts of the vulvo-vaginal opening; he was not prepared to find these so numerous and so extensive—in fact, hardly one of Dr. Duncan's cases had escaped without tearing of some part or other of the orifice. He (Dr. Underhill) thought partial central rupture, involving the vaginal mucous membrane, but not reaching to the skin, were not at all uncommon, even when the fourchette remained entire. As regards the paper read to-day, he looked upon it as one of great value, and was much struck by the way in which the observations and measurements of Drs. Duncan and Budin, begun with different objects and from different points of view, fitted into and were complementary of one another; together they formed a very valuable contribution to the mechanism of labour.

Dr. MACDONALD thought these tears of a minor degree quite as common in private practice as in hospital, but he feared that the true explanation of the apparent discrepancy was that they were often overlooked in the case of the private patient. Though he had never had an opportunity of seeing complete central rupture, he could bear

out Dr. Duncan in his statement regarding the occurrence of those tears beginning posteriorly and traversing the perineal tissues down to the skin, but not coming through it. Cases of that kind had frequently occurred in his experience. He thought that, during delivery, tears often occurred during the passage of the shoulders, and he wished Dr. Duncan had treated of this. As to the relation of these cases to fever, septicæmia, &c., he had no doubt there was some important connexion.

Professor SIMPSON was not astonished at the frequency of these lacerations, as exact observations such as those of Dr. Duncan and Schroeder had always showed them to be present. Many years ago, when investigating this subject, he had found that in all primiparous cases there was a rupture. He alluded to a case in which an extensive internal rupture occurred, a large flap of tissue being extruded without rupture of the perineum. In this case no tear could be felt before the head passed. In the Maternity Hospital he had lately had opportunity of verifying the results of Dr. Duncan. Referring again to the frequency of rupture in primiparæ, he noticed that, in a paper by Dr. Hunter on an Epidemic of Puerperal Fever in Linlithgow, it had been observed that the fever had specially attacked primiparæ. In multiparous cases in the Maternity he had found a good many internal fissures. Lacerations were more pronounced in proportion to the diameter of the foetal head. He attached great importance to the passage of the shoulder as a cause of rupture. Lately, in a case at the Maternity in which forceps were used, there occurred only a slight fissure during the passage of the head, but when the shoulder came forward the tear extended back to the anus. He referred to the greater frequency of lacerations on the left than on the right side as brought out by Dr. Duncan's paper, and wondered if this had anything to do with the position of the patient during delivery.

Dr. DUNCAN, in reply, said that he did not attach importance to the opinion of practitioners who had not made deliberate and careful examination of the parts after delivery. He referred to the case he had related of a primipara in which he had no suspicion of rupture, and the patient complained of nothing whatever, and yet, on examination, he had found most extensive lacerations. As to the forceps, he would say, in answer to Dr. Milne, that it had been proved in the Dresden Hospital that lacerations were more common in these cases; but he allowed that proof was yet required to demonstrate whether the lacerations in these cases were caused by the forceps, or the natural result of the conditions requiring the use of the forceps. He had little doubt there must be some connexion between the use of the forceps and the greater mortality in instrumental cases. He thanked the Fellows for the reception given to his paper.

## OBSTETRICAL SOCIETY OF DUBLIN.

*Meeting, December 9th, 1876.*THOMAS DARBY, F.R.C.S.I., *President, in the Chair.*

Dr. L. ATTHILL exhibited a specimen of a very large myxomatous tumour of a benign nature, which he had removed from a patient still in the Rotunda Hospital. The patient was a young, healthy, married woman. The tumour appeared about twelve months before her admission to hospital; it was then about the size of a walnut; at that time she was pregnant. After parturition, it partially disappeared; after a lapse of two or three months, however, it increased rapidly in size, and, although painless, caused so much inconvenience that she wished to have it removed. Under chloroform, and after a troublesome operation, which occupied half an hour, this was effected; it proved to be of enormous size, and so deeply seated that its enucleation was a dangerous and difficult matter—the danger of hæmorrhage compelling him to use only his fingers and the handle of the knife. A very large cavity was left, which extended down to near the tuber ischii; this was filled with dry cotton. During the operation there was but little hæmorrhage; but after three days, sharp secondary hæmorrhage occurred, which was checked by the introduction of cotton saturated with perchloride of iron. The labium was still thick and indurated, and Dr. Atthill believed the patient would soon return to have it removed. The tumour was inclosed in a very indistinct capsule.

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*Notes on Diphtheria.*

By HENRY KENNEDY, M.B., Physician to Simpson's Hospital, and the Whitworth, Drumcondra.

To the following paper I have given the title of "Notes," because it does not profess to be in any way a general account of the disease of which it speaks. It is in fact a few jottings down of diphtheria as it has come under my own immediate notice within the last few years. Amongst these jottings, however, one question has cropped up which I am particularly anxious to bring before the members of the Obstetrical Society—I mean the identity or non-identity of diphtheria and croup—a question which, as you are aware, has been widely discussed in London and elsewhere very lately, and which would seem to have ended in the opinion that the two affections are identical. I shall reserve what I have to say on this point till further on in these remarks. It will be in the recollection of some present that several years since a rumour began to prevail that diphtheria had appeared in England, and some time subsequently it was found to have come amongst ourselves. It may be observed in passing that this is not



the first time disease, or rather diseases, broke out in England, and then spread, or seemed to spread, to this country. I do not say it was contagion, as ordinarily understood, which brought these diseases, but simply that they spread, their existence in England having gone before their presence amongst ourselves. In this way it was that, in the year 1832, cholera appeared first in England, and subsequently here; and again, in the great epidemic fever of 1847-48—while Ireland got all the credit of generating the fever, and the terms “famine fever,” “Irish fever,” and so on, were very common in many of the English newspapers, the real facts were, that for many weeks before fever prevailed amongst us here it had existed in many parts of England far above the averages. I mention this point especially, because I have reason to know much misunderstanding has existed about it. Just in the same way as already stated, diphtheria prevailed in England for a considerable period before it reached this country. The first case which occurred to myself was as follows, and I must say came upon me somewhat by surprise:—

CASE I.—A large fat woman, of forty years of age, was admitted into the Cork Street Hospital, labouring under typhus fever in a very severe form. She was densely spotted, the brain being much engaged, and had now been nine days ill. On my visit this day I could not but observe that a very marked change had occurred from the day before. Her countenance had become brighter, whilst the nurse reported that her power of swallowing was not at all as good as it had been. These were contradictory symptoms, if I may so speak of them, for when anything of dysphagia shows itself in typhus it usually goes hand-in-hand with the brain getting more and more profoundly engaged. Here, however, it was otherwise. But the symptom which had specially changed from the previous day was the pulse; from being one of 130, and each beat running into the other, it had now fallen some ten beats, each being distinct, whilst its character was full and bounding. The heat of skin, too, had increased. In fact the type of the fever had materially altered; and, on closer examination, I found that one side of the neck was swollen, and on looking into the throat I observed that part of the fauces corresponding to the outside swelling was covered with a whitish pellicle. Diphtheria, in fact, existed, and this at the very time the fever was at the worst. It is enough to say of this case that she was treated mainly with barm and wine, and that after a very severe struggle she recovered, and more quickly than I could have anticipated. Subsequently to this period I met a considerable number of cases of a similar kind—that is, where diphtheria suddenly occurred in the progress of fever, both of the typhus and typhoid type. In Murchison's able work the writer alludes to the occurrence of diphtheria in typhoid alone, but it is certainly met in typhus also, of which a very marked example was under my care within the last two months. As the result of my entire experience on this point, I may add that the occurrence of

diphtheria in the course of ordinary fevers is not by any means a fatal complication. It is quite true I have met fatal cases and had them under my own care, but, considering the characters of the two diseases, I repeat it is not a very fatal coalition. It has, indeed, appeared to me, and more than once, that the attack of diphtheria, or rather the change in the character of the fever, and to which allusion has been already made, was beneficial rather than otherwise. But I cannot pursue this subject further here. Besides common fevers, it need scarcely be stated that diphtheria frequently complicates scarlatina, and it would seem as if there were some very close connexion between the two. I have often seen some members of a family attacked simultaneously with the two affections; while others, sick at the same time, only exhibited scarlatina. I may mention, in connexion with this subject, that many years since, when scarlatina prevailed most extensively in Dublin, and when the formidable swellings of the neck were infinitely more frequent than at the present time, it was often the practice to blister the swellings with the hope of lessening them. Under these circumstances I frequently observed the blistered surface exude a pellicle of lymph, which I now know was diphtheric, but which I did not recognise at the time. It need scarcely be added that the practice to which I allude I would not now follow. Others, I believe, have spoken of the same result from blisters.

Besides the distinct co-existence of the two diseases, of which one was diphtheria, I have seen this affection attended by symptoms which are worth a passing notice. Thus I cannot doubt having seen, and on different occasions, cases where, from first to last, none of the special exudation, said to be characteristic of the disease, showed itself. But why, it may be asked, did I think so? Simply because other cases in the same house, and at the same time, had the regular disease, and because the cases which showed no exudation were as long in getting well as the others. This absence of exudation has, I know, led to difficulties in the diagnosis, possibly even to the overlooking of the disease. Just as in scarlatina the disease may run its course without the ordinary eruption, or the usual sore throat, so in diphtheria there may be no exudation in the throat. In the following case I confess I was in great doubts of the nature of the case when I first saw it. But it was soon afterwards made clear enough.

CASE II.—I was asked by Dr. Wyse to see a child of six years of age, who had been unwell for about a fortnight, but had received little or no attention from her friends. In fact, the illness had not been so severe as to make the child take to its bed. There was some obscure history of the attack having commenced with sore throat. But inspection showed little or nothing to help the diagnosis. The symptom, however, for which our advice had been asked was a difficulty in swallowing. With this it was noticed that the speech was much impeded, and though the child had evidently the wish both to speak and put out its tongue, it could do neither; and a very strange

appearance, I must say, it gave the child. It need only be stated further that the child died within three days of this time, and the character of the disease would have remained unknown, or at least have been only guessed at, had not another child in the same house been now attacked with diphtheria in a well-marked form. It may, I think, be reasonably concluded that the first child died of the effects of the same disease. Speaking of the symptoms which may attend the disease, there is one worth noticing, and about which I am not sure much or any notice has been taken—I mean epistaxis. In one instance it occurred to an alarming extent, and it was chiefly on account of it I was sent for. Parties who had seen the child before me had spoken doubtfully of the nature of the case, and when the bleeding occurred, as just stated, I saw the patient. The loss of blood must have been considerable, judging by the countenance, whilst the pulse was very rapid. My attention was at once caught by some swelling on one side of the neck, and this, coupled with the high fever, led me to look into the throat, where there was no difficulty in seeing the characteristic exudation of the disease, which had formed on one side of the fauces. The patient, I should have said, was a girl of eleven years of age, and made a very tedious recovery, which, however, may have been accounted for by the fact that, as the throat got better, the disease showed itself on the vulva—fortunately, however, not in a severe degree.

Of the various parts on which the exudation may show itself, the internal fauces take, of course, the first place, and from this it may spread in any direction, and, as is well known, ultimately affect the hearing, the smelling, the voice, rendering it nasal, or causing the child to snore in its sleep, of which last I very recently had an example under my charge.\* In rarer cases the exudation shows itself on other parts. Thus, in a case which I saw with Dr. Barker, it was very distinct on the lips and nostrils, and there was even an appearance of it on the conjunctiva of one eye. When I speak of the special organs being affected, it might be more correct to describe them as after-effects, for it is well known they frequently make their appearance long after the exudation has gone. Nothing, it seems to me, could be more convincing that the disease of which I am speaking is a constitutional one, than the fact of two or more parts being attacked at once, or it might be in succession; and this is also shown by the well-known fact of the renewal of the exudation in the throat itself, and this may occur again and again. This, it seems to me, is a point we should never forget. I have purposely omitted till now one of the complications

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\* In connexion with this part of my subject, allusion may be made to a case brought before the Pathological Society of Dublin several years ago. The case was that of a child who died of diarrhoea and wasting, and on post mortem examination an exudation of lymph was found to coat, and be adherent to, the entire mucous intestinal tract, beginning in the stomach itself, and reaching to the rectum. Not an inch of the whole canal was free of it. Whether this coating was of the diphtheric kind, I shall not take on me to determine.



which may arise in the course of the disease—I mean the exudation passing down into the larynx and trachea, and so causing croup, or a disease like it. It has been already stated, and you are all aware, that within a very brief period a great discussion has taken place in London as to the identity of this form of croup—that is, what may be called diphtheric croup, and the croup described years since by Cheyne and other authors—and the conclusion which seems to have been arrived at is, that the two affections are identical. In this view I cannot coincide. I believe the two diseases to be essentially distinct, and for the following reasons :—Cheyne's croup, as it may be called for the sake of distinction, has always appeared to me to be a local inflammation of the larynx and trachea, and more rarely of the bronchial tubes ; and this inflammation is followed by the effusion of lymph on the mucous surface. In this disease it has never been my lot to see the inner throat implicated. On the contrary, when inspected, it has been singularly free from disease. What does precede the attack of the larynx is bronchitis, and this often exists a few days previously. In fact, the attack begins in the lung, and then spreads upwards to the trachea, and so to the larynx. This state, too, is accompanied with fever of a much more sthenic character than what I have seen with diphtheria, and I need scarcely add, as bearing out this view, that the treatment which answers best in the first stage of the two affections is directly opposite. The one is some modification of the antiphlogistic treatment, while the other is the very contrary. I have never seen any case of diphtheria where I could have ventured on the use of tartar emetic, but I have nearly always done so in cases of croup. But further, I have seen nothing which would lead me to think that Cheyne's croup was a contagious disease, whilst I have with diphtheria ; and all know that two, three, and even four members of one family, and at the same time, are often attacked.

But again, there is a symptom described which I have often seen, but only in diphtheria—I mean an enlarged gland or glands, and it is curious how frequently it is confined to one side of the neck. I have never seen this in croup. It is but right to observe, however, that it is not always present in diphtheria.

But still further—any one who has watched cases of both diseases, which are going on to a fatal termination, cannot fail to have been struck with the marked contrasts they afford. In the croup it is a still-increasing dyspnoea, most painful to witness : whilst the jugulars are full, the face is pale and swollen, the lips blue, and the expression that of anguish. In diphtheria, on the contrary, the face exhibits none of these features ; it is sunk, and, as it were, resigned. There is good reason to conclude that the suffering is next to none, and the death comes by asthenia, and in its best-marked form. It is difficult, to my mind, to speak of a greater contrast than these two states afford. But there is still another reason which seems to me to separate these two affections. Croup, we know, is a disease of childhood, and attended by exudation on the mucous surface. Now this very rarely



occurs in adult life, and when inflammation does attack the larynx in grown people, we know the result is œdema of the glottis, of which disease the celebrated Washington died.

To all this line of argument I know it will be said that I have omitted to notice those cases of diphtheria where the exudation spread from the fauces to the larynx, and so caused croup, which it is not possible to distinguish from the other forms. Now, whilst admitting that the disease so spreads, it does not by any means seem to me to follow that the two affections are identical. There is no reason why the larynx should not exhibit varieties of disease, just as the throat or the stomach do ; and though there is exudation in both the affections under consideration, and on the very same parts, it is not a necessity that it is of the very same character in each. In the cases of fatal diphtheria exhibited at our Pathological Society—and there have been a good many—I did not see one where the rima glottidis exhibited the appearances of general croup, such as may be seen by any one in the Museum of the College of Surgeons. Effusion of lymph there undoubtedly was in some, but it was semi-fluid, and in detached portions. Nor has it been my lot to see any case die from direct obstruction of the rima, nor any case where diphtheria began in the larynx. Yet I have had my share of fatal cases, and in one family no less than four children were swept off, all of them dying in an asthenic state, and the youngest dying first. When the breathing was oppressed it has not seemed to me to be due to obstruction at the rima, but to that general state of the system which so constantly goes hand in hand with all those acute diseases in which the constitution is profoundly engaged.

For these several reasons, then, I must side with those who consider the two affections distinct ; and, at the risk of being thought tedious, would repeat the several points already given :—

1. That diphtheria begins in the throat, and from this may spread downwards, so as to involve the larynx ; whilst Cheyne's croup either commences in the larynx, or as bronchitis, and then spreads upwards to the larynx.

2. That diphtheria is essentially a constitutional affection, whilst there are no grounds for supposing that croup is of the same character.

3. That whilst the fever of croup is very commonly sthenic or inflammatory, that attendant on diphtheria is in a very marked degree asthenic.

4. That the treatment of the two affections is, in consequence, essentially different.

5. That diphtheria very generally exhibits some enlargement of a gland or glands in the neck—a state which is not observed in croup.

6. That the progress of the two affections towards a fatal result affords a very marked contrast the one to the other.

7. That there are no grounds whatever for supposing Cheyne's

croup to be contagious, whilst there are the strongest for supposing diphtheria to be so.

As bearing on this point of my subject, I may say that very recently I have looked into Cheyne's work, and find it expressly stated that inspection of the inner throat showed it was not involved in the disease he described; and his father's experience, which seems to have been of the very largest, was to the same purport.\* If this be not strong proof in favour of the views I would advocate—viz., that the two affections are distinct—I know not what is, for Cheyne had no theory to support, and is acknowledged by all to have been a most accurate observer as well as describer of disease.

This question is not one either of mere curiosity. It has a most important bearing on the treatment of these affections, and on no point more so than the question of operation, when such proceeding may be required. But it would be quite foreign to my present purpose to enter on this question here.

In the preceding observations some of the points bearing on the diagnosis of diphtheria have been noticed, and I would call attention to it again, not because the disease, when once seen, can be mistaken, but because it may be overlooked, even when present. It is by no means uncommon to meet cases where the child, or even adults, make no complaint of their throats, or the patient may be so young as not to be able to express its suffering. In the former the disease may readily be overlooked; and for myself, I believe the disease, in many instances at least, does not entail that suffering which might be expected. The sensibility of the parts, so far from being increased, has seemed to me to be diminished, and hence less complaint is made; and, even when dysphagia exists, I have thought it was more due to a want of power than to the presence of pain; nor, from what I have seen, would I compare the suffering caused by diphtheria with that arising from other affections of the throat. This point, I think, is one of some moment, and I should be glad to hear the opinions of others on it. The age of the patient is, as already stated, another cause for the possibility of overlooking the disease. Within the last month a case of this kind came under my notice. A mother applied at the Whitworth Hospital, Drumcondra, complaining of sore throat. On inspecting the throat, it exhibited all the characters of diphtheria; and with it she also directed my attention to her right ear, which presented the signs of erysipelas, being much swollen and red. This was a complication I had not seen before. The woman was carrying an infant of four months old, and she casually stated that she thought it was not well; but, though nursing it, she did not say a word of any inability to swallow. The

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\* On referring to Houston's Catalogue of the College of Surgeons' Museum, I find that, out of nearly twenty specimens of croup, two only are described as diphtheritic, whilst in most of them the inner throat is expressly stated to have been quite healthy.

idea, however, at once struck me that possibly the infant had the same disease as its mother, and on looking into the throat the idea was confirmed, for diphtheria was well marked. Contrary to what I expected, this infant has recovered in a degree, but is not yet quite well. On the treatment of diphtheria I have very little to say. To the inner throat I believe it is always well to apply some kind of caustic, either the solid nitrate of silver or a solution of it. I have found the tincture of perchloride of iron answer well. It may be used very freely, and is sufficiently caustic to act as such; or, when the fœtor is great, the glycerine of carbolic acid suits admirably. I know not whether the experience of others has been the same as mine, but poultices I have found of little or no use. They do not give that relief which is afforded in other inflammatory affections of the throat; and this, in a degree, bears out what I have already stated about the diminished sensibility which seems to pervade those parts where exudation exists. The general treatment which suits best is what may be called a tonic one, including both liquid food and wine, the mineral acids, with preparations of iron, and sometimes, but not always, the chlorate of potash. On this part of my subject there is only one point to notice. In several cases I was unable to get the throat to heal; and it may be observed, in passing, that it is commonly a much longer process than which might be expected—the redness and excoriation, if there be not ulceration, persists long after the patient ceases to complain. Neither is it by any means uncommon, as is well known, for the exudation to repeat itself again and again. Under these circumstances, the treatment which has been just glanced at has often failed, and I then had recourse to Fowler's solution, and with very satisfactory results. Indeed, I have sometimes thought that this medicine might have been used with advantage at an earlier stage of the disease.

The PRESIDENT said that paralysis alone, as a sequel of diphtheria, was sufficient to make a great distinction between it and inflammatory croup, which was never followed by such a result. True croup never attacked children above the age of fourteen or fifteen, while diphtheria was not confined to any age. He had seen great advantage in croup from the application of leeches, and even venesection from the jugular vein—a treatment which would not be proposed in diphtheria.

Dr. MACSWINEY said that in England the opinion had been gaining ground that pseudo-membranous croup and laryngeal diphtheria are the same disease. In France the majority of physicians held this doctrine, following the teaching of Velpeau, Trousseau, and Guernsant. In a report to the Florentine Medical Society on a great epidemic of diphtheria in Florence, six or eight years ago, the universal medical opinion was declared to be that pseudo-membranous croup and tracheal diphtheria were identical. In Germany confusion had arisen from the use of the term croupous for superficial, and diphtheritic for deeper exudation on the mucous membrane. But he believed



that the great body of German physicians now held the two diseases to be the same.

Dr. MONTGOMERY mentioned a case of typhoid fever in a boy, aged eleven, in which diphtheria had supervened at the end of three weeks. Aphonia followed, but the patient ultimately recovered.

Dr. JOHN A. BRYNE did not believe that croup and diphtheria were identical. He mentioned, however, a case in which a fine boy, aged ten, was attacked by croup and died, notwithstanding tracheotomy. In a few days his sister, a child of three, was attacked by the same disease, and also died. There was not the least appearance of diphtheria, nor any cases in the neighbourhood.

Dr. KENNEDY said that the experience of Dr. Cheyne, published in 1809, that in croup the internal throat was quite free, was a strong argument in favour of his views. Tracheotomy sometimes succeeded even in cases which appeared hopeless; but croup was a more favourable disease for operation than diphtheria.

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*Epithelioma of Cervix Uteri—Operation; Death from Collapse.*

Dr. ATTHILL said: I have some diffidence in showing this specimen to the Society, nevertheless I consider it to be my duty to do so, for we ought to publish our failures as well as our successes. The patient from whom I removed this growth was sent to me from a remote part of the country, evidently fast sinking of hæmorrhage, which proceeded from a huge mass of epithelioma projecting into the vagina. There could not have been a more unfavourable case. This specimen is now so shrunk that it does not represent more than a third of the mass which filled up the vagina. When she was admitted into hospital the case was a hopeless one, still I thought it my duty to do something for her. On passing my finger up, I thought I detected tolerably healthy tissue above the growth which sprang from the lips of the os uteri, and I resolved to amputate the cervix—an operation which I have performed before with some success, at least to the extent of prolonging the patient's life a few weeks or months. This operation was difficult, because I could see nothing except the mass, and, indeed, could feel little else, so completely did it fill the vagina. I succeeded, however, in passing a wire beyond what I deemed to be the diseased tissues, and believed I had reached tolerably healthy structures, and in removing this mass without difficulty, but I then became aware that the wire of the écraseur had drawn in a fold of vaginal wall, and that I had opened the cavity of the peritoneum. Under the circumstances, I thought it best to leave the patient alone, such cases not being necessarily fatal. After some time she rallied, and I thought she might survive for a time. There was no hæmorrhage, but some occurred subsequently, and she died within forty-eight hours. The exact cause of death was not evident, but I think she died of collapse. There are two lessons to be learned from this



case. In writing on the subject of amputation of the cervix uteri, I have pointed out the possibility of the accident occurring, which here happened—namely, opening the peritoneum while using the écraseur. In this case a very remarkable condition existed, which I never saw before—namely, that the cancerous mass grew upwards as well as downwards. It was, in fact, to a certain extent, mushroom-shaped, and to this condition I attribute the accident. The second inference to be drawn from the present case is this—that Marion Sims's operation is safer than amputation of the cervix. In Dr. Sims's operation we should have scooped all this mass away. I was deterred from that operation by the size of the mass, which was so enormous that I did not think I could scoop it all away. In this I think I was mistaken, and I am now satisfied that his operation is the safer one of the two, and that it would have been better to have removed all this mass with a scoop, and then dissected upwards. Neither operation, however, would have sufficed to save this patient's life, for, in addition to this large diseased mass which was removed and which you see here, Douglas's space was filled with cancerous matter. If I had not operated, the patient would have died within a fortnight; but if I had not opened into the peritoneum, she might have lived a month or two. While, therefore, I regret the failure of the operation and the unfortunate accident which resulted in the patient's death, still I look on the operation as justifiable; and while I take warning for the failure, I cannot say that I blame myself for the result.

The PRESIDENT.—Had she peritonitis?

Dr. ATTHILL.—No; she died from collapse. The opening of the peritoneum is not necessarily fatal. I know two cases of it in which the patient recovered where this occurred.

## Obstetric Summary.

### *The Structure of the Placenta in Extra-Uterine Fœtation, and Intra-Peritoneal Migration of the Ovum.*

Dr. Leopold of Leipsig relates a case of tubal fœtation, in which a migration of the ovum from the ovary of one side across the peritoneal cavity into the Fallopian tube of the opposite side appeared to be demonstrated, and in which a microscopic investigation was made into the structure of the placenta. The patient was thirty-seven years old, and the last normal menstruation took place at the beginning of December, 1875. A week after the time when the next period was due, metrorrhagia commenced, and lasted three weeks. During March she had several attacks of hypogastric pain, and on March 24th similar symptoms of a more severe kind accompanied by vomiting. On March 28th the uterus was found to be enlarged, anteflexed, and somewhat tender. Behind the cervix was a tender swelling, but both lateral culs-de-sac were free. No tumour at the side or in front

of the uterus could be detected, the abdominal walls being much laden with fat. On April 2nd, symptoms of pneumonia in the right lung came on, and the retro-uterine swelling was found to have increased to the size of a child's head, the enlarged uterus being pushed forward and upward against the abdominal wall. A diagnosis was made of normal pregnancy combined with a retro-uterine tumour, probably a hæmatocele. The condition of the patient continued greatly to improve up to April 18th. On that day, shortly after having got out of bed for the purpose of defecation, and having laid down again, she was suddenly attacked by dyspnœa and died.

At the autopsy, the iliac veins were found to contain some brownish friable clots. The pulmonary artery near its origin from the heart contained an old adherent embolus, which extended into both its main branches. The space remaining by its side was blocked by a small recent embolus. The lower lobes of both lungs contained numerous hæmorrhagic infarctions. Douglass's fossa was filled by a large mass of clot weighing several pounds, the intestines above it being united by peritoneal adhesions. At the distal extremity of the left Fallopian tube was an extra-uterine sac, about the size of a coconut, containing a somewhat macerated foetus of about three months' development. The uterus was 12.5 cm. long, the cavity of its body being 8 cm. long. Its mucous membrane was for the most part about 2 to 3 mm. thick, but there were some flakes of membrane from 6 to 8 mm. thick. The right Fallopian tube was completely closed at the uterine end, and had undergone cystic dilatation. The entrance of the left tube into the uterine cavity was obstructed by two small mucous polypi, which must have prevented the ovum from ascending the tube from the uterus, even if the occlusion of the right tube was not prior to the foetation. The right ovary contained a corpus luteum, 4.3 by 1.4 cm. in size. The left ovary was flattened and atrophied. It thus appeared clear that the ovum must have traversed the abdominal cavity from the right ovary to the left tube. The author believes that probably many ova had escaped into the abdominal cavity and been lost, but that one had happened to come within reach of the current of serum setting towards the fimbriated extremity of the left tube. The wall of the extra-uterine sac was very thin and partially eroded at its lower extremity, and from this point the hæmorrhage appeared to have occurred.

On microscopic examination, the uterine glands were found to be enlarged and dilated into lamellary cavities, at the part where separation from the muscular coat appeared almost ready to take place. The cells of the mucous membrane resembled ordinary decidual cells, except that they were smaller. The cylindrical epithelium on the surface was intact in parts. Small curling arteries were seen, and numerous dilated capillaries close to the surface. The veins were few, and were directed perpendicularly from the surface. Here and there were extravasations of blood beneath the surface of the mucous membrane.

The muscular wall of the Fallopian tube in the neighbourhood of the extra-uterine sac was increased to at least double its normal thickness, and was highly vascular, but the mucous membrane was very thin, not being more than  $\frac{1}{2}$  mm. thick, and showed few vessels and no glandular openings. Chorionic villi were attached over about half the inner surface of the sac. The muscular coat was thinned and its fibres stretched asunder in places. Immediately within it were several layers of fibrin into which the villi were embedded, reaching the muscular coat, and some of them extending close beneath its serous covering. No trace either of decidua serotina or decidua reflexa could be discovered. This condition closely resembled that found in a preserved specimen of tubal pregnancy at the eighth week, which the author had examined, and in which the state of things had not been complicated by any deposition of fibrin. In that case the layer of villi lay immediately beneath the muscular coat and even penetrated into it, without the intervention of any appreciable layer of decidua serotina. The extremities of the villi were surrounded by large bloodvessels, but no inter-villous blood spaces could be discovered. The rest of the interior of the sac was covered by a very thin mucous membrane, consisting only of one or two layers of cells resembling ordinary decidual cells. — *Archiv für Gynäkologie*, B. x. H. 2.

## Gynæcic Summary.

### *The Treatment of Ovarian Tumours by Electrolysis.*

In the *New York Medical Journal* for January, 1877, Dr. Emil Flies relates the result of treatment of an ovarian tumour by galvanopuncture. The patient was thirty years old, married seven years, and was confined for the third time in January, 1867. In December, 1867, sensations, inclinations, and bodily alterations, similar to those occurring in pregnancy, took place, but her menses were uninterruptedly regular. A hydatidiform mole, however, was said to have been expelled. From February, 1868, the abdomen grew very rapidly, her strength simultaneously diminishing. About July her feet became œdematous, but no considerable impairment of digestion or respiration took place. When she came under observation there was fluctuation over the whole abdomen, and dulness except in the lumbar regions, and over the stomach. The uterus was of normal size, movable, and pushed backward. The circumference of the abdomen at the umbilicus was 98 cm.

Electrolysis was performed in the following manner:—In the right iliac region a slightly-oiled exploring trocar and canula was pushed through the abdominal walls into the cyst, the trocar removed, and a steel wire connected with the positive pole of a galvanic-battery, insulated nearly to the free end by means of a coating of varnish, was introduced through the canula, so that a small portion of the insulated



part of the wire projected beyond the canula into the cyst. The negative pole, in the shape of a broad, muslin-covered electrode, moistened, was applied to the left side of the abdomen. The author used the canula, and not simply the insulated needle—first, because he had not yet been able to find an insulating cover for the needle sufficiently perfect in its smoothness; and second, because he feared that coagula formed at the positive pole might adhere to the needle, and render its withdrawal irritating, a disadvantage which the canula would prevent by peeling off the adherent coagulum. The author's theory of the action of electrolysis is based on that of Wiedeman, that the fluid through which a galvanic current is going, interrupted by a porous wall, moves through this wall in the direction of the positive current, and the quantity of fluid so transmitted in equal periods of time, is directly proportioned to the intensity of the current, and independent of the surface and thickness of the porous wall. He therefore considers that the positive pole ought always to be introduced into a cyst, the negative pole being outside.

The operations were performed at the author's consulting-room, the patient having some distance to ride and walk home, and eighteen cells were used at first, the number being afterwards increased to forty. Being advised to apply at her home wet cloths to alleviate any pain at the seat of puncture, she was compelled to do so after each of the first three galvanic applications for about six to eight hours, but subsequently hardly for one or two hours, and sometimes not at all. The treatment was commenced on November 21st, 1868, and continued on almost every second or third day. The length of the application was at first eight minutes, and it was afterwards increased to half an hour. On January 9th the circumference at the umbilicus had diminished from 98 to 83 centimetres, and those at lower levels in still greater degree. The upper margin of the cyst could be felt as a distinct ledge, about four centimetres above the umbilicus. On this day electrolysis was applied for the last time, and the patient went home as usual, and continued well for the rest of the day. The same evening, she was suddenly attacked by a fainting-fit, followed by chill and severe pain in the abdomen. Symptoms of peritonitis became developed, with great distension of the abdomen, fluctuation over greater surface than before, small frequent pulse, and prostration. Temporary improvement took place, but on the 14th vomiting of stercoraceous matter occurred, and continued until her death on the 18th. The author considers that the unfortunate result was due to the patient's moving about after the operation, and would in future only undertake electrolysis in the patient's home, or in a hospital. He thinks that the diminution in the tumour obtained is sufficient to recommend the method for further trials.

In the March number of the same journal, Dr. Semeleder also relates a death from peritonitis which followed the treatment by electrolysis. The patient had a multilocular cyst of enormous size, fifty-two and a half inches in circumference, and had been tapped twice,



ten and two days before the first application of electricity. At the first tapping, forty-five pounds of a clear yellowish, slightly glutinous fluid were evacuated; at the second, the cyst first tapped was punctured again, and fifteen pounds more were removed; then, from the same puncture another cyst was tapped, and eleven pounds of fluid, somewhat more albuminous than the first, were withdrawn. Some fifteen to twenty pounds were left in the tumour.

After twelve applications of electrolysis the patient sank rapidly and died, having never complained of pain, but the pulse having become gradually rapid. The autopsy showed peritonitis, which had evidently started from the point where once, in the only application of two needles in this case, the negative pole had been inserted, and during eight minutes a current allowed to pass capable of decomposing 15 cubic centimetre of acidulated water per minute. A sloughing was observed on the skin at this point, about one-sixth of an inch in diameter. The contents of the corresponding cyst were partly coagulated in the form of whitish threads, and of a cloudy deposit. The author attributes the result partly to the patient's age and her poor state of health, but he considers that the negative pole is less safe to introduce, on account of the greater likelihood of sloughing being produced.

Dr. Semeleder uses either Callaud's battery of zinc and copper elements, or Leiter's, of zinc and carbon. He generally employs from eight to ten cells, and rarely as many as twelve. He does not usually extend the sittings beyond five minutes, but repeats them almost every day. He does not think it necessary to insulate the needles, which are either of platinum or steel, the latter being preferred. The positive pole only is generally introduced, the negative pole being applied to the skin with a sponge electrode.

Dr. Fieber, of Vienna, in the *American Journal of Obstetrics* for October, 1876, mentions two cases of ovarian tumours cured by electrolysis, and considers that the greatest variety of neoplasms can be destroyed in this way with the same facility as ovarian cysts. His experience is that in electrolysis of ovarian cysts the effects are not always patent at once, but make themselves apparent rather in the form of after-effects. The explanation is, that the result is due not so much to the direct chemical action as to the degenerative process in the tumour set on foot by the electrolysis. He therefore recommends that an interval should be allowed between the different applications, but not a sufficiently long one to give the destructive process time for limitation, and the neoplasm for recovery from the electrolytic influence.

A successful result from the application of electrolysis is related by Dr. Herse, of Brooklyn, in the *American Journal of Obstetrics* for January, 1877. The patient was forty-three years old; had had one child twenty years before; menstruation regular. She was first seen in October, 1874, when she had noticed some enlargement of the abdomen for three years. An ovarian cyst of small size was diagnosed,

and the diagnosis confirmed by Dr. Noeggerath. The circumference at the umbilicus was then 29 inches. In October, 1876, she again came under observation, some œdema of the legs having shown itself. The circumference of the abdomen had increased to 35 inches, and menstruation had ceased for two months. In consultation with Dr. Skene, it was decided that there was no urgent need for ovariectomy, and that electrolysis, as recommended by Dr. Semeleder and Dr. Fieber should be tried. On November 11th a steel needle three inches long was introduced midway between umbilicus and pubes, and connected with the negative pole of a Drescher's (zinc and carbon) battery. The current used gave a distinct shock to the tongue, and decomposed water very slowly. The positive electrode was introduced into the vagina. The application was made for ten minutes, and but little pain followed. Three days afterwards the circumference of the abdomen was reduced three inches, and its walls were flaccid. This time two needles connected with the negative pole were introduced; the positive electrode was again placed in the vagina. The application was made for fifteen minutes. After a third sitting of a similar kind the circumference of the abdomen was reduced from 35 to 27 inches. Although the cyst still appeared to contain some fluid, yet as the patient now experienced no inconvenience, it was considered safer to suspend the treatment. A month later there had been no increase of size, and the residue of the cyst appeared to be harder.

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#### *Abdominal Drainage in Ovariectomy.*

In the *Archiv für Gynäkologie*, B. ix. H. 3, Professor Hildebrandt recommends the treatment of the pedicle in ovariectomy by ligatures of stout silk, cut short and dropped, combined with the use of a drainage tube, as far preferable to the use of the clamp. The drainage tube is passed into the vagina as recommended by Marion Sims. This is done by carrying a canula to the bottom of Douglass's fossa in the middle line, two fingers of the other hand being in the vagina, and then forcing the trocar straight through the septum, taking care that it does not go obliquely. A thin drainage tube is then passed through the canula, the canula is withdrawn, and the tube fixed in the lower angle of the wound. The author points out that by this method the course of the tube through the peritoneal cavity is a short one; it does not lie near enough to the ligatured pedicle to convey air to it, and so cause suppuration, and it is in contact with the intestines for a short distance only, lying against the uterus and bladder. If, however, the use of the drainage tube is combined with that of the clamp, the tube must be fixed in the wound at a higher point, and is more likely to cause irritation, having to pass for a greater distance through the peritoneal cavity. The author considers that the drainage can only be of use for the first four or five days, during which time only bleeding or exudation is likely to take

place, and that, at the end of that time, should be removed. Three cases are related in which his method was followed. Two of these recovered without bad symptom, the third was fatal. In the fatal case the cyst had ruptured previously, and innumerable colloid masses were found adherent to the peritoneum. These could not be effectually removed at the operation, nor was it likely that they could pass through the drainage tube. At the autopsy peritonitis was found, with adhesion of the intestines, and purulent exudation, but the peritonitis was less in the neighbourhood of the drainage tube than elsewhere.

In the same number Professor Schatz gives his experience of drainage in ovariectomy. He considers it as unnecessary except in cases in which hæmorrhage or considerable serous exudation is to be expected. He points out also that if the drainage tube is passed through the pouch of Douglass, no effectual washing out of the whole peritoneal cavity with antiseptic fluid by its means is possible. Two successful cases are related in which the operation was performed under the carbolic spray, the pedicle treated by the clamp, and a drainage tube passed through the pouch of Douglass into the vagina, the upper end being fixed in the wound. One of these patients had undergone ovariectomy twenty-five years before. A third case, also successful, is recorded, in which the operation was performed under the carbolic spray, the pedicle treated by the clamp, and no drainage tube used, the cyst being found free from adhesions.

In the *Sammlung Klinische Vorträge*, No. 109, Professor Hégar expresses his preference for the immediate closure of the abdomen in the great majority of cases. He considers that great danger attends the leaving of sutures or pieces of ligatured tissue to be enclosed only when the tissue is of such a nature that a rapid decomposition is to be expected, before there is time for it to become encapsuled by adhesions, otherwise a local abscess may indeed be formed in some cases, but this generally makes its way either to the surface of the abdomen or the intestine, and, although it involves some danger, does not prevent a favourable result. If, however, it is found necessary to leave behind considerable portions of solid tumour, or detached and bruised portions of the cyst-wall, the most complete drainage possible should be established, and a single opening is not sufficient.

Professor Hégar considers that dropped ligatures, or the charred remnant of a pedicle divided by cautery, are by no means absolutely free from injurious results. He relates fifteen cases of ovariectomy performed in the course of a year and a half, without a single death. Of these seven were straightforward cases and eight complicated. The pedicle was secured by the clamp in five cases, divided by the cautery and dropped in one, ligatured and dropped in nine. In the one case treated by cautery a somewhat severe attack of peritonitis came on on the eighteenth day, after the patient had gone home. In one case treated by clamp, febrile symptoms came on on the seventh



day, and an abscess formed in the neighbourhood of some ligatures which had been applied to the omentum and dropped. Of the cases in which the pedicle was ligatured and dropped, an abscess formed and discharged at the end of the third week in one; in a second, the ligature and a piece of necrosed tissue was discharged through the bowel on the sixteenth day; in a third, two ligatures with a piece of tissue were discharged through the opening of an abscess in the abdominal wall on the seventeenth day, and two more ligatures on the twenty-first day; in a fourth, an abscess was formed, and discharged on the nineteenth day by the rectum. The author has even observed similar results after a much longer interval. In a case in which the pedicle was ligatured and dropped, the patient became pregnant, and was delivered naturally eighteen months after the operation, but an abscess afterwards formed in the neighbourhood of the pedicle, and discharged through the cicatrix in the abdomen six or seven weeks later. Professor Hégar employs silk for the ligatures. He adopts all precautions to guard against the access of any septic influence, but does not make use of the carbolic spray, fearing the occurrence of symptoms of carbolic poisoning. For the cleansing of instruments and hands he uses chlorine water, regarding this as less irritating than carbolic acid.

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#### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

“Headaches: their Nature, Causes, and Treatment.” By William Henry Day, M.D., M.R.C.P., Physician to the Samaritan Hospital for Women and Children. London: J. & A. Churchill. Pp. 312.

“The Treatment of Spina Bifida by a New Method.” By James Morton, M.D., Surgeon and Clinical Lecturer on Surgery in the Glasgow Royal Infirmary. Glasgow: James Maclehose. 1877. Pp. 120.

“Pneumatic Pressure and the Genu-Pectoral Posture in the Reduction of Uterine Luxations.” By A. Sibley Campbell, M.D. New York. 1877.

“A New Method of Treating Hæmorrhage after Abortions and at Full Term, when due to Uterine Inertia.” By H. Otis Hyatt, M.D. New York. 1876.

Communications received from Dr. Angus Macdonald, Dr. Bantock, Dr. Aust Lawrence, Dr. Graily Hewitt, Dr. Wiglesworth, Dr. Bozeman, Dr. Oliver, Dr. Otis Hyatt, Dr. Roper, Prof. Trenholme, Mr. Minser, Coburg, and Dr. J. Williams.

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Original Communications.

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ON THE BEARINGS OF CHRONIC DISEASE OF  
THE HEART UPON PREGNANCY AND  
PARTURITION.

By ANGUS MACDONALD, M.D., F.R.C.P.E., F.R.S.E.

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School, and Physician-Accoucheur New Town Dispensary, Edinburgh.

(Read before the Obstetrical Society of Edinburgh.)

(Continued from p. 94.)

LEBERT contributes a valuable article on the subject in Bd. iii. s. 38, *Archiv für Gynäkologie*. Its scope is more general than that of any of those I have as yet referred to. He agrees with Spiegelberg in regard to the important bearing which disturbed relationship of pressure has on cases of heart disease during pregnancy and parturition. But he insists that the problem has bearings wider than these, involving not only the alterations in the valves but also in the motor powers—the muscular tissue of the heart itself—and changes in the entire vascular system of the greater and lesser circulations. Lebert makes the following pregnant statement, which I cannot avoid translating *in extenso*:—"Before I communicate my observations, I observe that chronic endocarditis with valvular lesions from the second childhood onwards occurs not seldom in girls, and undoubtedly more

frequently among them than among boys of the same age. Leaving out of account those more rare cases in which an acute articular rheumatism or chorea are demonstrable as etiological forces, valvular endocarditis develops itself for the most part stealthily, without any obvious cause. I have indeed seen it occasionally exist in girls for years with no observable disturbance ; usually, however, shortness of breath appears sooner or later, and the subjective troubles make gradual advances. Puberty of itself has little influence upon the cause of the disease, yet in not a very few cases it is so far favourable, as menstruation at this time is habitually profuse, and thereby, for a time, a check is given to venous engorgement. However, one sees also, it is true, before and soon after puberty, some cases of this sort run a fatal course, and I have published several of such cases on different occasions. We have mostly to deal with diseases of the left orifices, with preponderating frequency of the mitral, more seldom with the tricuspid opening. Only seldom are these congenital lesions of the right heart. . . . If the compensation begins to be imperfect in young girls, if the subjective disturbances have gradually increased, then I *dissuade* from marriage, if I am consulted in the matter, because it is precisely those cases upon which pregnancy and parturition may operate very unfavourably. Altogether the fact is worthy of consideration, that not simply during the pregnancy the disturbances of compensation may come on much more readily, much more quickly, and much more intensely than apart from it, but that also truly the valvular endocarditis which develops itself during the second half of the pregnancy shares with puerperal endocarditis the tendency to decomposition and consecutive embolisms, and therefore is disproportionately more dangerous, than the more stealthily advancing, and in its progress usually less serious, plastic endocarditis, apart from pregnancy and the lying-in period."

Lebert accompanies and illustrates these valuable remarks with the records of three cases of the very highest interest, and which are most elaborately reported. One only is logically connected with the subject of this paper, and it is given abridged in my selection of cases (see Case XXVII.).

Of the other two, the one is a case of severe puerperal fever, with breathlessness, ulcerative endocarditis, and embolism of the pulmonary artery; and the other of puerperal fever following abortion at the sixth month, and accompanied with embolism of the pulmonary artery, gangrene of the lower lobe of right lung, &c. &c.

These cases are both extremely important as bearing unmistakable evidence of the evil effects that diseases arising in connexion with pregnancy may impress upon the circulatory system.

But as in neither of them is there evidence from the records that the patients had been, previously to the delivery, the subjects of heart disease, and as I started with the determination to exclude anything approaching to a minute discussion of ulcerative endocarditis, I have forborne from including these among my cases.

The third, however, being that of a patient who had suffered from partial lesion for some months before becoming pregnant, is fairly entitled to come within my classification.

I have also to state here that, in the *Archiv für Gynäk.*, Bd. iv. s. 15, 1872, Ahlfeld records briefly two interesting cases of pregnancy complicated with chronic heart disease, abstracts of which are given by me farther on. (See Cases XIX. and XXVI.)

It is to Fritsch's recent papers in the *Archiv für Gynäkologie*, however, that we have to turn for the most recent and able efforts at the solution of this difficult problem.

This author denies the correctness of Spiegelberg's view relative to diminished aortic tension. But he allows that the sudden accidents that arise from heart disease during child-bed are due to the defective cardiac compensation being unable to meet the conditions introduced by the suddenly altered relative pressure, although he disagrees with Spiegelberg as to the manner in which it acts.

Fritsch predicates a slight degree of cardiac dilatation to meet the requirements of the greater amount of blood circulating in the heart during pregnancy at each beat. This dilatation, he argues, must involve both sides of the heart. The healthy heart is able to meet these extra requirements, but the

diseased organ suffers from imperfect power of accommodation to these demands upon it, and as the pregnancy advances the effects of this defective power of accommodation increase. There is also reason to believe that the valvular lesions are apt to be altered for the worse during pregnancy. This is evidenced by the greater readiness with which pregnant women, whose hearts are unsound, suffer from puerperal endocarditis. If we estimate the effects of labour pains upon the circulation under normal circumstances, we find that during the pains, especially during the bearing-down pains, the pressure on it is increased ; owing, first, to the condition of forced expiration in which the thorax is placed ; and, second, to the greater obstruction presented to the passage of blood through the uterus.

The sudden deaths occurring during labour in cases of mitral disease Fritsch would refer to the paralysing effect of the sudden flow of a strong stream of blood into the right heart, under the influence of the above causes that heighten vascular tension. It would appear that Panum has shown by experiment that a sudden jet of blood projected into the heart does paralyse it. The contractions of the uterus, and consequent lessening of the peripheral circulatory area, cannot of itself, as Spiegelberg believes, says our author, diminish external pressure, but increase it. The real state of matters is probably as follows. The great amount of blood squeezed out of the uterus finds easy accommodation in the enormous abdominal venous plexuses, and in the expansible capillary plexuses of the peritonæum and broad ligaments. This it readily does as the abdominal pressure after labour, though it need not be negative, is nevertheless much diminished. Provided the heart is healthy, all is soon restored to order. But suppose the heart is too large in connexion with disease involving it, too little blood flows into it, it contracts strikingly irregularly, too little reaches the smaller circulation, and the blood throughout the body is defectively oxygenated. Vital force sinks in consequence, the ill-nourished cardiac muscle loses its force, and thus is established a vicious circle of the most dangerous kind.

On this depression of vitality fatal post-partum hæmor-



rhage and other clinical symptoms may supervene. Thus the emptying of the uterus causes dyspnœa—the patient turns pale or cyanotic—faints, or the cerebral anæmia may be sufficient to give rise to convulsions. The pulse is weak, small, and arrhythmic, and the patient dies from what, for lack of a better name, we call cardiac paralysis.

The risk manifestly must be greater in large hearts, yet well-compensated hearts may overcome the period of violence and pressure from the labours, and in anæmic and weakened persons possibly during the pregnancy the deterioration is so important that the labour is either the end or the beginning of the end.

Clinical experience leads Fritsch to believe that serious results are most likely to occur in cases of advanced mitral stenosis. It will be noticed as of considerable importance for our consideration of the question in its practical bearings, that the cases of mitral insufficiency that are complicated with stenosis are those that Spiegelberg has found most fatal, although he differs from Fritsch *in toto cælo* respecting the theoretical exposition of the chain of causation.

At page 306, Bd. ix. *Archiv für Gynäkologie*, 1876, Lahs of Marburg publishes an ill-tempered criticism of Fritsch's first paper, in which he angrily decries most of the positions taken up by Fritsch, and lays claim to the discovery of a mode of experiment to prove that the introduction of a series of collateral tubes between an entrance and exit pipe, does not diminish but increases the velocity of passage of fluid through the exit pipe, when constant pressure of fluid is maintained at the entrance pipe. This experiment he had not previously published, though it directs attention to an identical but more complete one by Dr. A. W. Volkmann, published twenty-five years ago. As this experiment bears upon the question of aortic tension immediately after labour, I will explain it presently along with Volkmann's own observations. I shall only remark further in this reference, that Lahs believes the capacity of the thoracic cavity invariable, and consequently denies the possibility of either a sudden flow of blood to the heart, or of any marked deficiency of such flow, so long as the patient maintains the horizontal

position, owing to the elastic force of the lungs being constant in quantity, and in reference to abdominal pressure being negative.

Fritsch, at s. 270, Bd. x. *Archiv für Gynäkologie*, publishes a supplement to his first paper, containing a rejoinder to Lahs's remarks, and, what is much more to our purpose, the record of a valuable set of cases of heart disease in connexion with pregnancy and parturition, along with some extremely learned and interesting observations upon the subject. Abstracts of these cases are given by me further on. Besides objecting to the grotesque accusation of unfairness on the part of Lahs, and at the same time refusing unreserved adhesion to the general application of Volkmann's experiment to the animal economy, he argues that the heart, from clinical observation, has unquestionably more work to perform during pregnancy than apart from that condition, and that the pains—more especially the down-bearing pains—aggravate the difficulties. He controverts Lahs's assertion that the whole lumen of the collective vessels flowing in the thorax is an unchangeable amount in relation always to the height of the elastic pressure of the lungs. He argues that if respiration alone regulated the heart's action by its aspirative power, then the latter must act synchronously with the former. But every one knows that such is not the case. He maintains that while the respiration regulates and controls the circulation, the heart's force maintains it. If any one of the important regulative forces of the circulation fails—as, for example, the intra-abdominal pressure—then defective blood supply to the heart and slowing of the circulation must be set up, and the blood must accumulate in the vena cava inferior and in the abdomen. He also explains certain hydrodynamic experiments he had undertaken, which led him to the following conclusion—that by the elongation of the channel of the stream, the amount of fluid discharged must diminish, or the driving force must be increased, in order to obtain an equal amount of fluid discharge; especially alternating, widening, and narrowing in the additional portions of tube, had a retarding influence. He believes that the pregnant uterus would have a similar influence.

I have already touched incidentally upon a hydrodynamic experiment of Volkmann's, but as it bears very importantly upon the truth of Spiegelberg's assumption that we have sudden decrease of arterial pressure immediately after labour, I require to make a somewhat fuller reference to it in this place. For the complete account, see "*Hämodynamik*," s. 78, Leipsic, 1850. The experiment is briefly thus:—With the view of ascertaining the effects of the subdividing and subsequent reunion of the vessels in the animal economy when conveying the blood from the heart to the tissues and back to the heart again, Volkmann constructed two apparatuses, a lesser and a greater, on the same model. In the former, simply one branching and reunion took place between the entrance and exit pipes, so that the fluid was made to move merely a part of the way in two streams. In the larger apparatus he introduced a second bifurcation, one upon each of the two primary branches, so that the fluid in passing from the entrance tube to the outlet tube became first subdivided into two streams, then into four, these again being collected, first into two, and subsequently into one, and then discharged. The tubes were of the same diameter throughout, and the apparatuses were perfectly symmetrical in regard to their parts, and situated in one plane.

By calculation, the surface of adhesion between fluid and tubes in the smaller was to that in the larger as 4 : 10. The length of channel traversed by the fluid in the smaller was to that in the larger as 3 : 5.

On trial of these apparatuses with an equal amount of fluid pressure at the entrance tube of each, Volkmann found that the larger apparatus did not present more resistance than the smaller to the passage of fluid, and makes the following interesting comment on his experiment:—

"From this (experiment) the astonishing result is attained, that the large apparatus opposes not more hindrance to the movement of the fluid than the smaller. The entire excess of retarding power, which it incontestably contains, is equilibrated by a favourable disposition of the collateral tubes, and rendered inoperative.

"If now we consider the two tubular apparatuses as the

vascular systems of two animals of unequal size, and the height of fall as the power of the heart, so there results that the same heart power may be sufficient to force the blood through the body of a large animal as a small one, provided only the collateral vessels are adapted to facilitate the flowing off of the blood. In reality, the static force of the heart in warm-blooded animals of the most different sizes appears to be subject to only slight variations, a fact we shall recur to farther on. Increase of blood channels therefore, by the introduction of collateral vessels, can, under circumstances, set aside the disadvantage which increase of the surface of adhesion would present to the movement of the blood. What are these circumstances? We as yet do not know them, and it is questionable if even the higher mathematics would be in a position to explain them. Possibly it is that general forward movement is produced in the current, and the resistance arising out of the enlarged surface of cohesion is either entirely, or at least partially, annulled if the branching of the tubes is associated with enlargement of the channel of the current."

It will be seen from this experiment that the sinking of aortic pressure immediately after labour from the removal of the placental circulation is not so self-evident an assumption as its learned author would have us to believe. At the same time, as Fritsch points out, such an experiment cannot be taken for our purposes in its entirety. We have not to deal in the living economy with tubes of equal calibre and rigid walls, but of varying size and with compressible walls, subjected to ever-changing amounts of pressure. Nervous influences and chemical changes constantly impress their peculiar effects upon the circulation, and yet they do not come into play in a hydrodynamic experiment.

With a very brief reference to Löhlein's views on this head, I must close the historical part of my paper.

This author takes pains to point out how antagonistic to one another are the views respectively advocated on this subject by Spiegelberg and by Fritsch.

Löhlein grants the possibility of a slight increase of the work done by the ventricle on account of the increased



quantity of blood circulating during the latter months; but he contends that, except the compensation in the heart is totally destroyed, the organ is able to accommodate itself to this increase, it is so slight in its amount and so slow in its onset.

Our author believes further that the placental circulation is capable of giving little obstruction to the circulation. The slight increase in tension of the circulation is not capable, according to him, of producing sudden serious disturbances during pregnancy, but it may co-operate injuriously along with other evil influences, such as compression of the chest, intercurrent bronchitis, pneumonia, pleurisy, &c., in aggravating the evil effects of a slightly dilated right ventricle.

Therefore, during pregnancy, Löhlein holds that the possible increase in arterial pressure must act within extremely narrow limits in disturbing the circulation. As to labour, *à priori*, he holds that if sudden disturbances of pressure were the main danger, most deaths from heart disease in relation to pregnancy ought to occur during delivery, which experience tells us is not the case.

The author himself has treated fifteen cases of labour complicated with heart disease, and only one of the patients died during delivery, the cause of death being pulmonary œdema. This case was complicated, however, by recent pneumonia of the right lung, with, in addition, pleuritic effusion on the same side to the amount of ten ounces; the right ventricle of the heart was evidently dilated.

Spiegelberg, he argues, has not proved his point as to the sinking of arterial pressure after delivery, and furthermore, physiological authors who have investigated such matters agree in stating that to contract a portion of the arterial system is to increase the tension in the rest of it. He thinks Spiegelberg's view that danger in relation to delivery is to be dreaded on account of too copious amount of blood flowing into the heart is correct, as against Fritsch's notion that sudden death results from the paralysing influence of a sudden flow of blood into an empty heart, and the consequent irregular and imperfect action of the organ.

The greatly distended hyperæmic condition of the lungs

in such cases he does not regard, with Fritsch, as a terminal symptom, but as a consequence of the imperfect compensation in the pulmonary circuit.

He records one case from W. B. Lublinski, Berlin, 1873, which he conceives confirms his view. It is one of sudden death on the eighth day, from pulmonary oedema in connexion with mitral disease of long standing. It is interesting to us to notice, as I shall abundantly illustrate afterwards, that this case led to premature labour, along with symptoms of serious disturbance of the respiration as well as of the circulation, and that the labour was not at all severe in itself, but was followed by only temporary improvement for a day or two, which gave place then to an aggravation of all the severe symptoms. It is difficult to make out whether this was a case of stenosis or dilatation of the mitral, or both, for it is very unsatisfactorily reported. But so far as I can judge, there must have been a degree of stenosis.

The gist of Löhlein's opinions on the influence of heart disease upon pregnancy and parturition is given in the following sentences :—

“Of the alterations then that stand in direct relation with pregnancy and childbed there remain, strictly taken, only two to which we grant, according to the present position of our science, a definite influence upon the already otherwise disturbed relations of circulation.

“1. The compression of the lungs by the upward distended diaphragm during pregnancy, especially in connexion with greatly distended abdomen.

“2. The increased flow of blood to the pulmonary channels after delivery. To this has to be added the great variation in pressure during the activity of the pains.

“There is, however, also a further force introduced in addition to these, which by authors hitherto has either not been pointed out, or, if so, only indicated in a passing observation ; a force which is equally able to greatly increase the existing mechanical obstructions and make their compensation impossible, as also to call forth completely new, sudden accidents—viz., the tendency to the recurrence of the inflammatory processes on the already chronically diseased

portion of the vascular apparatus, which exists in pregnancy equally as well as in the lying-in week."

The rest of the paper is chiefly devoted to the records of cases of chronic heart disease, with more or less serious acute exacerbation in connexion with pregnancy and childbed, and concludes with a few remarks on treatment.

Löhlein seems to me to place much too great importance upon the influence of upward pressure of the pregnant uterus upon the chest, and also to over-estimate the aspiratory effect of the lungs after delivery. The original paper of Dohrn referred to above, at page 88, in no way supports either view; whilst his later contribution to the same subject, *Monat. für Geburtskunde*, Bd. xxviii. s. 457, at most proves only that in a majority of cases the vital capacity of the lungs is greater 12–14 days after delivery than in the latter weeks of pregnancy. It is on Dohrn's observations, however, that Löhlein chiefly supports his two main ideas in regard to the origin of disturbance during pregnancy and parturition respectively from cardiac disease. His reference to the disastrous effects of the derangement in pressure during the activity of the pains seems to me abundantly proved by clinical experience.

That there is much truth in his third head I am quite prepared to admit. But on this point I think he claims too much originality, for Lebert distinctly draws attention to it as one of the dangers that a patient with chronic heart disease is liable to, and it is inferentially deducible from the writings of almost every one who has directed attention to the subject.

I have thus traced as faithfully as possible the march of research upon these important conditions.

It will be seen that all the authors referred to are agreed that pregnancy is likely to introduce serious complications into the condition of a patient who suffers from chronic heart disease, except the lesion is of not very recent origin, and is well compensated, when there is a considerable probability that all may go well during the pregnancy, delivery, and childbed period.

It also appears that the symptoms of evil omen arise

chiefly in the region of the lesser circulation, and are seen in the form of extreme dyspnœa, suffocative bronchial catarrh, œdema of the lungs, &c., and are apt to be complicated by the spontaneous onset of premature labour, and frequently end in death either during delivery or the childbed period.

There is likewise manifest agreement in the belief that those urgent symptoms seldom occur till the first half of the pregnancy is past, and that they increase as the period of uterogestation advances, provided premature labour does not come on ; but that it by no means follows that they will either abate or disappear when the labour is past, although they are likely to attain a fearful intensity during the process.

It will also be noticed that cardiac lesions of recent date are shown to be peculiarly dangerous, partly because, owing to the imperfect compensation attending them, they are apt to give rise to dangerous weakness of the right ventricle during pregnancy, and more especially during delivery, and partly because they are more apt to be accompanied with fresh inflammatory changes in the endocardium, including ulcerative endocarditis, during the pregnancy or after delivery, even though the urgent symptoms during labour may have been recovered from.

It will also be observed that Lebert believes that pregnancy and parturition are very liable to operate injuriously, not only upon the valves of the heart, but upon its muscular tissue, and upon the general vascular system.

In regard to the precise manner in which lesions of the heart lead to dangerous consequences in connexion with labour, Spiegelberg has thrown out the ingenious theory that it is owing to suddenly diminished aortic pressure at the moment of delivery. The removal from the systemic circuit of the placental circulation, and the passage of the blood contained in the uterus before its final exhaustion into the venous circulation, according to him, have the effect of lessening suddenly the arterial tension and increasing the venous, more especially in the right side of the heart. If then the heart is already defective, and its compensation inclining to give way, this final assault is apt to so completely perturb its action as to lead to sudden death.



Fritsch, on the other hand, believes that danger under such circumstances is apt to arise rather from the dilated right heart being left too empty of blood, the large parametric venous plexuses, the other abdominal veins, &c., affording abundance of space to accommodate a large quantity of blood, especially after delivery, and when the abdominal pressure is not so great as it ought to be.

This condition of matters is apt, according to him, to lead under a down-bearing pain to a sudden gush of blood from the abdomen into the empty right side of the heart, and to exert there a paralysing effect upon the organ, explained according to Panum's experiment. The right heart then begins to contract upon the too small quantity of blood contained in it, its action is weak and irregular, too little blood gets to the pulmonary circulation, the blood is consequently imperfectly aerated. This again leads to imperfect cerebral nutrition, and so a vicious circle is established which ends in death.

Löhlein again denies both these views, and refers the accidents generally to imperfect cardiac compensation, aggravated by compression of the chest due to the distended abdomen during pregnancy, and by excessive blood supply in the lungs occasioned by the aspiratory effect of the over-distended thorax after delivery. In certain other cases, and more frequently he thinks than is usually believed, he thinks that acute inflammation of the diseased valves may lead to serious aggravation of symptoms both during pregnancy and child-bed.

I shall leave to the end of my paper any attempt to decide between these rival theorists, except in so far as I have incidentally referred to my own opinion in stating theirs.

After the cases are recorded, I shall be better able to substantiate the notions I have myself formed by reference to facts connected with them.

Suffice it at present for me to state, that the evidence on which Spiegelberg predicates his sudden and great decrease in aortic tension is to my mind unsatisfactory, though it is an extremely beautiful and fascinating mode of explaining many

of the difficulties connected with this subject. Indeed, there seems no well-established fact to support it, except that in cases of aortic deficiency the danger usually disappears with the termination of the second stage. But it does not take any great amount of acuteness to discover that in this case it may not be the diminution of arterial tension, but the absence of the extra tension, associated with the down-bearing effort which removes the risks.

If, however, I do not unreservedly believe in Spiegelberg's special views, I believe less in Fritsch's, except in very special cases ; and think that part of Löhlein's contribution to the subject the most satisfactory in which he deals with the likelihood of acute exacerbation of the disease, and its probable results.

I do think, however, that in the latter months of pregnancy there is evidence that cannot be contradicted, made up partly by the existence of an enlarged left ventricle, partly by the tendency to varicosity of the limbs, &c., to establish the existence of increased vascular tension. The evidence of the sphygmograph inclines also to prove this, as I read my observations, although its declarations are not very clear.

As this tension, according to my views, is mainly kept up by the somewhat hypertrophied ventricle, it must continue to exist for some time after delivery. This is against the views of Fritsch, but it corresponds with the results obtained by the sphygmograph, and explains to my mind how cardiac disturbances are so apt to arise subsequently to delivery.

I may here state that, in regard to the disputed question as to the slowing of the pulse in the newly-delivered, I have come to the conclusion, mainly on sphygmographic grounds, that the slow pulse-rate is here accompanied by increased tension, so that it is no exception to the general law that pulses of high tension are slow.

The cardiac murmurs that occur in childbed seem to me to be due to mitral insufficiency in connexion with the somewhat dilated heart. At any rate, they are usually heard at

the apex, and also a little to the left of the pulmonary area, exactly where murmurs of slight dilatation of the heart are found to occur. But they are not at all, in my experience, frequent.

Of fifteen ladies that I have lately attended with sound hearts, and of which I took special notice of this matter, in only three were murmurs audible.

I shall now proceed to consider those cases of chronic heart disease complicating pregnancy and parturition, which I have collected.

They amount in all to twenty-eight, and embrace—

1. Twelve cases in which mitral stenosis was the leading lesion, with or without a certain amount of insufficiency. These include one case of tricuspid stenosis, which is well known to be a rare condition. The heart in this case I am glad to be able to show to the members of the Society present.

2. Eight cases of mitral incompetency. Some of these combined a certain degree of stenosis with the insufficiency, but the latter was the leading defect in them all.

3. Five cases of aortic insufficiency. Three of these will be found to have been complicated with well-marked mitral obstruction.

4. One case of dilated weak heart.

5. Two cases of endocarditis, the one of the plastic form, and the other of the ulcerative type.

Ten of these cases I have myself watched more or less closely.

For the notes of two I am indebted to Dr. John Linton, and of one to Dr. Ziegler. One has been taken from Bennett's "Practice of Medicine," and one from Ramsbotham's "Midwifery."

The rest are abridged translations from the following German authors:—

From Hecker, two cases; from Spiegelberg, four cases; from Fritsch, four cases; from Ahlfeld, two cases; and from Lebert, one case.

CASE I.—*Mitral Stenosis.—Hæmoptysis, Palpitation, and Dyspnœa, at end of Sixth Month of First Pregnancy.—Pulmonary and General Œdema in the Second Pregnancy.—Labour Supervening Spontaneously about end of Eighth Month.—Death Six Days after Delivery.*

Mrs. J. T. S., primipara, aged thirty-four, consulted me in the beginning of April, 1870, for a cold accompanied with severe hæmoptysis, breathlessness, and palpitation. She had been married in July of 1869, and expected her confinement in July, 1870. I examined her chest with care, and found nothing marked so far as the lungs were concerned. But there was detected a distinct præcordial thrill and a loud presystolic murmur at the left apex of the heart. No other murmur audible. I concluded that the hæmoptysis was due to congestion of the pulmonary vessels owing to the mitral obstruction, as I could not elicit any pulmonic lesion. I inquired into her history, but could discover no trace of a rheumatic seizure. Furthermore, the patient had never suffered from marked breathlessness till about the time she sent for me. Digitalis and careful management succeeded in restoring equilibrium to the circulation, and the patient got on tolerably well for the rest of her pregnancy. There never was a recurrence of the hæmoptysis. She was confined on the 1st July. Her labour was easy and natural. She had chloroform during the latter part of it. She felt much better after her confinement, and suckled her child; and her health remained good till she became pregnant for the second time. Towards the middle of this pregnancy she became very markedly anæmic; her breathlessness, palpitation, and general discomfort returned, and her legs became enormously œdematous. About the end of the seventh month there was present general œdema, with cough and orthopnœa. I intended about this time to arrange for a consultation, with the view of deciding upon the propriety or otherwise of inducing premature labour, as Mrs. S. could now neither lie down nor move in bed, there were so much pulmonary œdema and general anasarca present. But on the 18th of May, 1872, the patient, being near the end of the eighth month, fell



in labour. The delivery was easy. I gave chloroform with some hesitation at first, but it was well borne, though the pulse was exceedingly weak and very irregular. But Mrs. S. did not improve much after the completion of labour. The anasarca and the dyspnœic symptoms continued, and she was scarcely able to take any food. Her condition remained much at a standstill, however, till the morning of the sixth day after her delivery, when she suddenly fell back in bed dead. There was no post-mortem.

This case occurred in my practice five or six years ago, before my attention was markedly directed to the subject, so that I regret that the notes of it are not so perfect as I should have liked. Still it is a case of considerable interest, and presents many of the peculiarities of its class. It will be noticed that this patient was not aware of having ever had rheumatic fever, and did not suffer from breathlessness, so far as she or her friends had observed, till she reached the sixth month of her first pregnancy. There is, to my mind, no doubt that Mrs. S. had either suffered from congenital stenosis of the mitral, or had been a victim of that stealthily advancing form of valvular endocarditis pointed out by Lebert, most probably from her early girlhood. The lesion, however, remained mute till the condition of pregnancy put additional strain upon the circulatory system, and hæmoptysis with breathlessness and palpitation supervened.

The employment of appropriate care and digitalis were sufficient to rehabilitate the heart for a time, and no distressing symptoms appeared at the period of delivery, nor after it, till the middle of the second pregnancy, when the threatening symptoms returned with redoubled intensity.

The question of premature labour was solved, as it usually is in such cases, by the onset of spontaneous premature delivery. But as happens not unfrequently, as we shall see, the labour being over established for Mrs. S. no immunity from danger. In less than a week death happened instantaneously, probably from asthenia—the heart being no longer able to propel a quantity of blood sufficient to maintain life, hurried on also, no doubt, by the imperfect aëration of the blood in the intensely œdematous lungs.

CASE II.—*Mitral and Tricuspid Stenosis with insufficiency.—Dropsical Symptoms in 1873, a month after a Confinement.—Embolism of Branch of left Middle Cerebral Artery, with Hemiplegia of the Right Side three months afterwards.—Recovery.—Pregnancy again in 1876, with great aggravation of previous symptoms of Dropsy and Dyspnœa.—Labour premature at beginning of ninth month: Easy.—Death from Exhaustion fifteen days afterwards.—Enormous Dilatation of both Auricles.—Contraction of both Auriculo-Ventricular Orifices.—Enlargement of both Ventricles.—Atrophy of posterior half of left Corpus Striatum.*

(Case reported by Mr. F. H. RUSSELL, my Dispensary Pupil.)

Mrs. Kay, aged forty-six, residing at 17, St. James's Street, states that in August, 1873, about a month after giving birth to her last child, she began to suffer from dropsy of the abdomen and legs, with loss of appetite. This became gradually worse till October, when she went to the Royal Infirmary, under Dr. Haldane's care. While there, about a month after she was admitted, and the day before she was to have been dismissed as cured, she had a bad attack of hemiplegia of the right side, being unconscious for seven days. She was able to leave the hospital in January, 1874, feeling quite well, except her right arm, which always remained semi-contracted and weak. In the beginning of 1875, she began to be troubled with difficulty of breathing and slight swellings in the ankles, symptoms which have continued ever since, with only occasional short periods of intermission. She never in her youth suffered from rheumatic fever.

Her parents lived to about seventy, and had excellent health. Her sister is still living. Patient has had five children, four of whom are still living. She has always been of strictly temperate habits.

*Condition on 1st February, 1877.*—Fairly developed, height about five feet three inches, muscles rather wasted, especially in the left leg and the right arm. Lies most comfortably on her left side or sitting propped up in bed. Perspires very

much, especially at night. Left knee ankylosed and marked on the outside by four cicatrices, the result of an injury when she was five years old. The right arm is kept drawn up by the flexor muscles, but is capable of being used with considerable freedom.

Pulsation visible in the veins of the neck on the right side. No atheroma to be detected. Pulse 86, rather weak and sometimes intermittent. She has suffered occasionally from palpitation, and from pain in the cardiac region, but never from syncope. Apex beat is seen rather diffused between the sixth and seventh ribs. On palpation the impulse of the cardiac apex can be felt between the sixth and seventh ribs, about four inches to the left of the sternum. The heart's action is often intermittent, and varies much in strength. Slight pulsation can be felt in the auricular area, immediately outside the pulmonary area; it seems to precede the apex beat, and is followed by a marked systolic thrill. Vertical cardiac dulness, a little within the mammary line, extends from the second rib to the lower border of the seventh, a distance of seven inches, where it is lost in the tympanitic sound of the stomach. Transverse dulness, on a level with the fourth rib, extends from three-quarters of an inch to the right of the sternum to nearly four inches to its left, being a distance of five and a quarter inches. In the mitral area there is a well-marked presystolic murmur, followed by a blowing systolic murmur, which partially replaces the first sound. The second sound is accentuated. In the tricuspid area both murmurs are equally well marked; if anything, the presystolic is scarcely so distinctly heard here. In the aortic area the murmurs can still be heard, but less clearly. In this area the second sound is accentuated and slightly impure. In the pulmonary area the blowing systolic is well marked, still better a little outside of it, over the auricle; second sound strongly accentuated.

Respirations 28 in a minute. Slight dyspnœa, but not severe. Expectoration thin and frothy, but very small in amount. Little cough. Some feeling of tightness on the right side. Patient used to be much troubled with hæmoptysis, having an attack nearly every time she went upstairs. Chest

does not expand freely. The muscles of the neck are called into play in inspiration. Vocal fremitus normal ; similarly resonance. Percussion note somewhat impaired over the right side, more especially at base posteriorly. Over the left normal. Slight bubbling râles can be heard over right lung at various points. Respiratory sounds somewhat weak, and respiration prolonged. Urine increased in quantity, high coloured, sp. gr. 1020, contains no albumen at present, but did when tested in January. Copious urates.

Liver dulness not increased. Anorexia and dyspepsia great.

On the night of the 4th Feb., the patient began to have slight pains in the back, but did not think she was in labour, as she did not expect to be confined for three weeks. Next morning she was alarmed to find some blood in the bed, and she at once sent for Mr. Russell. On his making an examination at 8 o'clock A.M., the os was found to be dilated to the size of a crown-piece, the head presenting in the left occipito-anterior position. The uterine contractions were not very strong, and almost painless ; but the head being small, progress was rapid. During the labour the heart's action increased in rapidity, and became more irregular ; the pulsation in the auricular area also became more marked. Pulse 105 ; respiration 34 per minute. The child was born at 8.40, and was followed by a gush of water and blood, but the bleeding ceased in about ten minutes. The placenta remained in the uterus about three-quarters of an hour after the child was born, and was not removed till 10 o'clock A.M. The patient felt very comfortable after the birth. The pulse fell to 90, and the respiration to 28. For the next three days she was much troubled with after-pains, but otherwise did very well. On the third day the baby began to refuse its milk, and, getting gradually weaker, died on the 15th. On the 9th the patient began to be troubled with her breasts, which greatly increased her difficulty of breathing. On the 10th the dyspnœa had further increased, the respirations being 38 and the pulse 100. The second sound became slightly reduplicated, and the pulsation in the auricular area increased. The signs of œdema in the right



lung became more marked, and the ankles somewhat swollen. On the 13th she began to cough, and had a large amount of expectoration; the swelling in her ankles became less, and her breasts almost ceased to trouble her, but the evidence of pulmonary œdema increased. She rallied a little on the 16th, but by the 18th was again much worse, her respirations being 48 and very laboured, and her pulse 106 and irregular. The presystolic murmur could not now be detected, on account of the disturbances in the breathing. There was now marked dulness along the lower half of the right side posteriorly, with fine crepitation on expiration. These symptoms became gradually worse till the 21st Feb., when the patient sank. The treatment in this case was directed to support by wine, milk, beef-tea, &c., to meet the condition of the lungs with stimulating expectorants, and to aid the heart's action by well-sustained doses of digitalis. A post-mortem examination was allowed, and was made by Dr. Hamilton thirty-six hours after death. Appearances were as follow:—

Body poorly nourished. Left knee partially ankylosed and drawn up, with marks of previous sinuses. Mammæ not well developed. Cartilages of second pair of ribs ossified. Right pleural cavity contained about thirty-five ounces of serum; a small quantity also in the left. Pericardium contains about three ounces of straw-coloured serum. Heart enlarged to about twice the natural size, extremely flabby, and surface rather greasy; slight deposits of fat on the surface; left ventricle distended with dark-coloured blood; walls natural in thickness; tissue flabby and markedly fatty; aortic valves competent; corpora aurantii, more especially on one cusp, hard and thickened; base of the valves also hard and somewhat calcareous; mitral valve admitted the little finger; its anterior cusp hard, and evidently in a calcareous condition; posterior cusp similarly affected; both valves adherent at their edges to one another; base of valves thickened and somewhat leathery, but not much contracted; left auricle much distended—twice or thrice the natural size—and thickened; auricular appendage also enlarged; the tricuspid valve

admits the forefinger ; all its divisions are adherent to one another ; the cusps are thickened, especially towards their free edges ; ventricle extremely small, walls somewhat thinned ; a decolorised clot in the pulmonary artery ; pulmonary valves normal ; right auricle occupied by a decolorised clot ; its cavity somewhat distended ; auricular appendage also distended.

Left lung somewhat emphysematous, more especially at upper part and edge.

Right lung : Pleural surface covered with a recent and extremely thin deposit of inflammatory lymph. Old cicatrix in upper lobe, uniting this to the lower lobe. Anterior margins of lung slightly emphysematous ; substance very œdematous and congested. The cicatrix has the appearance of being the result of an old infarction. At a localised spot in the lower lobe, about the size of a small orange, is a densely infiltrated portion, deeply congested at some parts, lightly at others, in all probability a recent infarction, sharply defined ; surrounding substance deeply congested.

Liver small, more especially its left lobe. A cicatrix on the surface of the right lobe. The organ is extremely congested, and somewhat atrophic ; in some parts fatty. Spleen somewhat hypertrophied.

Kidneys healthy.

Uterus healthy and involution well advanced. Breadth of fundus between the insertions of the Fallopian tubes three and a half inches ; length of body and cervix combined four and a half inches.

Brain : Membranes somewhat anæmic. Posterior half of left corpus striatum entirely wasted, and in its situation a somewhat dense membrane of a slightly yellow colour. Optic thalamus of the same side irregular in shape, and its inner aspect somewhat flattened. The vessels appear entirely healthy.

We had the satisfaction in this case to have the condition during life taken with great care, and also of checking the observations made then by an exhaustive post-mortem examination. The points of interest in this patient's condition are more numerous than in Case I. We have

here also no history of rheumatism, so that the main cardiac lesions must have been either congenital or the result of slow and silent endocarditis in early life, unless the disease took origin as an acute endocarditis after the fifth confinement in 1873. The occurrence of embolism three months afterwards no doubt favours this view, as this accident more especially follows recent cases of endocarditis. It would appear, however, if the lesion dates from early life, that the compensatory arrangements were so good that tolerable health was maintained till the patient's system was repeatedly subjected to the special strain of pregnancy, but that after giving birth to her fifth child the previously mute lesion became manifest, leading first to dropsy and then to embolism in a branch of the left middle cerebral artery. Considering the great amount of structural change affecting the left corpus striatum and optic thalamus, extending as such lesions are known to do down the cord, it is very surprising that such a large amount of motion could have been possessed by the extremities on the right side of the body. Such a condition lends strong support to the view that adjoining portions of the brain can vicariously discharge the function of other parts that have been destroyed by disease. But besides leading to cerebral embolism and dropsy, the effects of the backward congestion resulting from the extreme stenosis of the mitral are seen in the numerous infarctions of both old and recent date, as also in the bronchial congestion, the pulmonary œdema, and the pleuritic effusion. From the history of the physical signs it is manifest, however, that the latter condition only came on a very short time before death. The amount of cardiac disease in this patient was so great that her life could scarcely have been much prolonged even though pregnancy had not occurred. Still, that the latter condition seriously aggravated matters, and intensified the antecedent tendency to death, does not admit of doubt. For the symptoms of dyspnœa and pulmonary œdema with premature onset of labour are just those leading features that are found in Case I., and that we shall find, as we proceed to the other cases, almost invariably accompany severe cardiac disease when it

is complicated with pregnancy. One would naturally have expected that in such a case as this the delivery would have led to remission of the chest symptoms, and indeed it is looked upon as an axiom among accoucheurs that premature labour is warranted in such cases. It will, however, be seen that in neither of these cases was premature delivery followed by any appreciable benefit, even when it occurred spontaneously, and consequently when it may be considered to have come on in the manner least likely to give rise to injurious effects. I may mention this by the way, as we shall see that these cases are not singular in this respect, and indeed from what I have been able to gather, I should be inclined to dispute the propriety of ever inducing premature labour to relieve pulmonary symptoms when the heart is diseased, except some abnormal abdominal pressure be present. But of this more afterwards. The pathological condition of the heart is extremely interesting. It will be observed that the left auricle was greatly distended and thickened, which was obviously the result of the efforts of the left auricle to propel the blood passing through it into the left ventricle against the obstruction caused by the extremely stenosed mitral. The left ventricle was large, and its walls of natural size, whilst the right ventricle was extremely small, and its walls thinned. The right auricle was distended. We observe here a rare condition of the right ventricle, occasioned doubtless by the long-continued tricuspid stenosis. This is the ordinary condition of the left ventricle in the case of mitral obstruction, but as tricuspid obstruction is very rare, this consequence of it must necessarily be rare also. I believe, however, that this condition must have tended towards diminishing the evil effects of this patient's heart disease so long as the right ventricle was able to move onwards sufficient blood to support existence. For the pulmonary vessels must have necessarily been subjected to a minimum amount of tension when to the retro-dilatation inseparable from the severe stenosis of the mitral there was merely added so much contraction of a small and thin right ventricle as was competent to carry on the circulation through them and to maintain life. In other words, I look upon the



small right ventricle here as a compensatory arrangement of a conservative nature, but which was liable to precipitate fatal results when it had superadded to its duties the propulsion of blood through an emphysematous and bronchitic lung. So soon as the right ventricle became unequal to its task of maintaining even the minimum of pulmonary circulation, then the destructive effects of retro-dilatation commencing at the mitral stricture would make itself abundantly evident. For the blood imperfectly forced towards the lung by a feeble right ventricle, the obstruction originating in the mitral valve during the contraction of the auricle, and the degree of regurgitation which would take place through the mitral orifice during the contraction of the flabby but yet tolerably powerful left ventricle, form a concurrence of influences all tending to maintain the lungs in a state of persistent hyperæmia. Little can be inferred with certainty from the condition of a heart so very much diseased, but it is, so far as it goes, on the side of the view of the French authors, that the left ventricle hypertrophies during pregnancy, for there does not seem to have been any obstruction in the systemic circulation to warrant the relative difference in size of the two ventricles. Both cavities, no doubt, could only be partially filled, in consequence of the stenosis of their respective afferent orifices, and the resistance presented by the force necessary to propel the current of blood through the lungs must have been to the right ventricle relatively greater than the force required to maintain the circulation of the blood throughout the body would be to the left ventricle, if we take the condition of pregnancy out of the reckoning; yet while the right ventricle became thinned and contracted, the left became dilated, and at any rate not thinned. So far, therefore, as this case may be depended upon, and I grant and have said that it is not much, it lends support to the view of there being a physiological hypertrophy of the left ventricle during pregnancy.

*(To be continued.)*

## ON KOLPOKLEISIS AND OTHER ALLIED PROCEDURES,

AS MEANS OF TREATING VESICO-VAGINAL FISTULE.

*Being an Answer to the Article of the late Prof. Simon of Heidelberg, entitled "A Comparison of Bozeman's Operation with that of the Author."*

By NATHAN BOZEMAN, M.D., New York.

SOON after the appearance of the paper in the *Wiener Medizinischer Wochenschrift*, Nos. 27—32, 1876, by Professor Simon, as above entitled, I began a reply to the same, and had advanced very far with my work when the sad intelligence of the distinguished surgeon's death reached me at Paris. My first impulse was to finish my reply and publish it in accordance with the original plan, hoping that some one of the numerous followers of the German master would take up the discussion of the questions at issue between us, and answer the objections which I felt myself bound to make to his views of practice. But, after reflection upon all the circumstances of the case, I entirely abandoned the idea of a formal reply, and proposed to myself instead to review the whole field of French, German, English, and American operations. By this course I trusted to reach a solution of the important question, *What is the best and safest operation at the present moment for the cure of vesico-vaginal fistule, with preservation of the generative functions?*

I have been deeply engrossed with the subject from that time to the present, and hope at no distant day to lay the result of my labours before the profession, believing that I shall thus contribute in a greater degree to the end proposed than I could do by pursuing any other course. But since my arrival in London a few days ago, I have carefully read in the *OBSTETRICAL JOURNAL* the English translation of the article in question, and also found several criticisms thereon which place me in a false light before the profession in Great Britain, and which, therefore, demand attention.


In order to do full justice to Professor Simon and his

claims, and, at the same time, to place the differences between us as regards kolpokleisis, and the best means of avoiding it, in a clear light, I will here introduce a few extracts from publications made by us respectively in 1868 and 1870, in connexion with a correspondence which took place between us after I left Heidelberg, concerning some of our operations performed there in the autumn of 1874.

In the first place, however, it is proper to say that in two articles published by me (New Orleans *Medical and Surgical Journal*, January, 1860, and New York *Medical Record*, December 2, 1867), I contended for priority in the operation of *transverse obliteration of the vagina in the urethral portion* as a means of relieving incontinence of urine, supposed to be otherwise incurable. Professor Simon having anticipated me in this operation nearly four years, and having seen my claim in the last-named journal, felt himself called upon to prove his rights to priority, and this he did to my entire satisfaction in a letter addressed to me through the *Deutsche Klinik*, Nos. 45 and 46, 1868, and a translation of which he caused to be made and distributed among the profession in America. Of the operation in question, and of his views at that date upon the treatment generally of vesico-vaginal fistule, he said :—

“The reason why I have proved the validity of my claims of priority at such length is simply this, that, in my opinion, kolpokleisis is the most important plastic operation which in the last decennia has originated from one single man. The operation for vesico-vaginal fistula by uniting the borders of the defect is indeed, in its present perfection and precision, a much more important acquisition than kolpokleisis, and probably the greatest achievement of our century in plastic surgery ; but it has not been carried to that perfection by a single man, but on the contrary, operators of all nations have contributed their share to it. The ‘uranoplasty’ of our ingenious countryman, von Langenbach, could alone be placed by the side of kolpokleisis, as far as the safety of the performance and its immediate success are concerned. It would rank higher still on account of its more frequent occurrence, if its benefit for the voice in increasing its purity could be secured, in all or in the majority of cases. But as in many cases this result is not obtained at all, and in others only incompletely, kolpokleisis must be considered the more important operation, as in all cases it fully answers its purpose. This operation, which I invented at the time when the obliteration of the vulva, pro-

posed by Vidal, proved inefficacious in re-establishing continence of urine, has already been performed more than fifty times with complete success. Through it, many patients with incurable defects of the bladder have been freed of the most intolerable suffering—viz., the incontinence of urine. I have myself in eighteen cases succeeded in effecting perfect obliteration, and every German surgeon who practises the art of curing vesico-vaginal fistules, has recorded one or more successful cases of that kind.

“Since the invention of kolpokleisis, however, I have not remained satisfied with that mode of operation, to which you still adhere. On the contrary, I have constantly laboured to perfect the method of operating; to multiply its chances of success in the different parts of the vagina, and to render its indications more precise. Whereas I had, in my first cases, operated only in the lower parts of the vagina, and had repeatedly met with small remaining fistules which could not be brought to heal, such occurrences are now extremely rare, and I close, as the case may be, in any height of the vagina, and immediately below the defect. Nay, in one case, where the fistule was high up in the fornix, I needed only one half of the latter for the obliteration, thus preserving the vagina in its whole length. (See my “*Beiträge zur Plastischen Chirurgie*,” Prag., 1868, p. 216.) Moreover, whereas I used to consider kolpokleisis indicated only where very large defects existed, I have now limited this indication a good deal, having cured at later periods very considerable defects by uniting the borders of the wound by sutures like these ( , by resorting to incisions along the sides and parallel with the sutures, and even by transplanting a flap from the vesico-vaginal wall. The size of a defect has, for the reasons enumerated, during the last five or six years, not been in my eyes an indication for kolpokleisis. On the other hand, I have found, among the large number of difficult and complicated cases which have come under my treatment, several in which it was either impossible or too dangerous to unite the borders, so that here I resorted to kolpokleisis.

“So much for kolpokleisis. I avail myself of this opportunity to present to you, esteemed colleague, and to your countrymen, a statement of the growth and progress of the operation for vesico-vaginal fistules in Germany, as much on this subject may still be unknown to you. My statements will no doubt be for you—the most experienced operator on fistules in America—of the greatest interest, as you will thereby perceive that the operation in question was fully practised in Germany before you and Sims came forth with it in England and France; that in this country it has been carried to a simplicity, perfection, and certainty of success which it has not attained in any other country, and that especially your American method and its modifications have been surpassed in every respect. Without fear of contradiction, I believe myself justified in considering, that of all surgeons, I have been most extensively occupied with this operation, practically and theoretically, and have most promoted its per-



fection. For this reason, it will not seem extravagant to you, if I speak in the following more particularly of my method of operating and the results achieved thereby. . . . My results *in toto* are consequently the following :—

Of 118 fistules which existed in 105 patients—

104	„	„	„	„	92	„	were completely cured.
5	„	„	„	„	5	„	closed except small openings.
3	„	„	„	„	2	„	as incurable, dismissed.
					6	„	died.

“Thus in comparing the results of 1859 by the old imperfect method, with those attained after that year by means of the improved one, the proportion is considerably in favour of the latter. While previous to 1859, of 22 fistules, only 14 (equal 64 per cent.), were cured, and 2 patients (equal 9 per cent.) died, after that period of 96 fistules which existed in 83 patients, 89 (equal 92 $\frac{2}{3}$  per cent.) fistules in 77 patients were cured, and only 4 patients (4 $\frac{1}{3}$  per cent.) died.

“With what safety the cures are effected by my simplified method, the following report of my latest operations may serve to inform you, besides my works of 1862 and 1868, in which the results are given in detail. During six months’ residence at Heidelberg (from May to October, 1868), we have operated on, in the hospital, 14 fistules in 14 patients. I have performed 12, and my assistants, Messrs. Heine and Hotz, each 1. Three of the fistules were very small; they had remained after previous operations at Rostock; the other 11 were new cases, but 6 of them had been operated already once or several times by other surgeons. Several of them were of considerable size; in 5 cases 12 sutures were required in order to close them, in 1 even 15. *Moreover, different complications existed, which made it necessary three times to embrace the posterior lip of the os uteri in the suture; once to overlap an existing atresia of the urethra; once to remove one; twice to perform kolpokleisis; and once to make a transplantation of a flap from the vulva.* Yet notwithstanding these troublesome circumstances, all 14 patients were cured by 17 operations. Of these, 11 required only 1 operation; 3 had to be operated on twice each—among them were 2 small fistules which had remained from previous operations.

“After such results, you will agree with me, esteemed colleague, that fine silk thread, which is much easier to apply than silver wire, is in no wise inferior to it, and that the catheter in permanence is an unnecessary and even detrimental burden to the patient. And you will also feel yourself in justice bound to acknowledge that the operation of vesico-vaginal fistula has reached, in Germany, a higher degree of simplicity, perfection, and certainty than in any other country.”

As further proof of the value attached by Professor Simon about that date to kolpokleisis, I will quote the views entertained by him upon the extension of the principle, as found

published in his justly popular work on Plastic Surgery ("Beiträge zur Plastischen Chirurgie," Prag., 1868, p. 216). Having found that transverse obliteration of the vagina in its lower third necessitated too great a sacrifice of the vaginal tract in cases where the fistule was small, but inaccessible on account of its height, he added two other forms of procedure, making in all three, and designated them topographically as follows :—

"1. Transverse obliteration of the vagina in the urethral portion.

"2. Transverse obliteration of the vagina within the limits of the base of the bladder.

"3. Oblique obliteration of the vagina in one or the other of the vaginal arches, according to the right or left situation of the fistule."

Again, as a guide for the employment of these classified procedures, he laid down (op. cit., p. 229) the following eight indications, based principally on the pathological conditions of the vagina and cervix uteri :—

"1. Great loss of substance, making it impossible to bring the two sides of the fistule together.

"2. Inaccessibility of the fistule from its high position, from the inversion of its edges, &c.

"3. Loss of the infra-vaginal cervix, and danger to the peritoneum.

"4. Hæmorrhage into the bladder, where considerable, after operations.

"5. Confinement by adhesions of the stump of the cervix uteri, inside the bladder.

"6. Atresia vaginæ above the fistule, with immobility of the posterior border of the latter.

"7. Obliteration of the urethra, with one fistule below and another above.

"8. Uretero-vaginal and uretero-uterine fistules."

The next year (*Deutsche Klinik*, No. 15, 1869), in an article entitled, "Effects of Urine and Saliva upon Tissues deprived of Epithelium," Professor Simon recorded some fifteen experiments made upon man, dogs, and rabbits, with the view, as stated, of controverting a popular error, with regard to the injurious influences of these secretions upon fresh wounds. Of the effects of urine he said :—

"It has been an undisputed dogma until quite recently that urine by its chemical properties has a very injurious effect upon the unprotected tissues of animals, that it prevents union by first intention,

that it destroys fresh cicatrices, and that when infiltrated in the tissues it leads in the end to their necrosis. This view has been held, not only with regard to decomposed and alkaline, but with regard to undecomposed and still acid urine. The latter has been supposed either in itself to have an injurious effect, or to rapidly undergo an ammoniacal decomposition when in contact with unprotected tissues, and then to develop destructive properties. Repeated observations which I have had the opportunity of making at the bedside, and experiments on animals, by which I have sought to confirm and to complete these observations, have contradicted this dogma in its main points ; and I have already, in several papers relating to operations on the generative and urinary organs of women, expressed my disbelief in it. In these papers, however, the experiments were only mentioned, and not described in detail, so that my views, as therein expressed, were without their complete demonstration. I am therefore induced by the importance of the subject to repair my omission here, and at the same time to explain the practical conclusions which may be drawn."

The first five of these experiments were made with fresh urine showing acid reaction. After injecting the fluid into the subcutaneous tissue of several rabbits and dogs, and seeing that it disappeared by absorption in a few hours without leaving any trace of its effects, it was then tried upon man, with a like negative result. Here the exposed surfaces resulting from incisions for hare-lip, and from other plastic operations about the face, were *washed* with the secretion, and then brought together with sutures in the ordinary way. In every case union by the first intention was said to take place with the same readiness as though water had been used. Even urine from a case of vesico-vaginal fistule loaded with pus and mucus, though still showing acid reaction, was used upon several dogs without changing the above results in the slightest particular.

The sixth and seventh experiments were made with ammoniacal urine, unfiltered and filtered. From their importance as regards the operation of vesico-vaginal fistule, I will here copy *in extenso* :—

"Experiment 6. From two to four drachms of alkaline urine, containing triple phosphates, mucus, and pus, were injected into several dogs and rabbits. *Result*: In all cases a large abscess was produced, containing dark and offensive pus, and the skin covering it soon sloughed, and left a large, slowly healing ulcer.

“Experiment 7. From two to four drachms of alkaline filtered urine were injected subcutaneously on several occasions into dogs. *Result*: In all these cases also abscesses were produced, but they ran their course with less destruction of the skin than in experiment 6; they made a smaller aperture in breaking, and healed more rapidly.”

The eighth, ninth, and tenth experiments were made upon the urine itself in open and closed vessels exposed to an average temperature with the view of determining under varied circumstances the time necessary to convert acid into alkaline urine. As these experiments are also important as illustrating the principle underlying the employment of kolpokleisis, I will also copy these *in extenso* :—

“Experiment 8. Half a drachm of good pus was mixed with half a pound of urine, and the fluid exposed daily for five or six hours to a temperature of  $30^{\circ}$ – $50^{\circ}$  C. The glass was not closed. *Result*: Alkaline reaction did not appear till the sixth day.

“Experiment 9. Two drachms of lean meat one day old were placed in one pound of fresh urine. The vessel was left open, and exposed daily for four to five hours to a temperature of  $30^{\circ}$ – $50^{\circ}$  C. *Result*: Alkaline reaction first appeared on the fifth day (after 106 hours).

“Experiment 10. The same experiment was performed with the modification that the vessel, having been completely filled, was closed, so as to exclude the air. *Result*: On the tenth day, when the vessel was opened, the urine was still acid, and the meat was not decomposed.”

The remaining five experiments were made with the view of explaining the mechanism and evil results of infiltration of urine resulting from rupture of the male urethra, and from other causes.

The deductions drawn by Professor Simon from these experiments are to be found in his concluding remarks, which, from their direct bearing upon the subject before us, I again quote *in extenso* :—

“The doctrine established by the foregoing experiments of the harmless effects of acid urine upon unprotected tissues, wounds, and cicatrices, which was first suggested to me many years ago by my observations at the bedside, and which has since received manifold confirmation in the experience of surgeons and gynæcologists who operate on the sexual and urinary organs, has a bearing, the extensiveness of which cannot be overrated, upon the mode of performing



and upon the result of such operations. In former days, when operators used the utmost care to convey the urine away from the wound, but paid much less attention to the mode of executing the operation, the result of the operations was most unfavourable. Since, however, the opposite plan has been adopted of expending the utmost care upon the execution of the operation, and adopting few or no precautions for the conveying away of the urine, most remarkable success has been attained. A good many years ago, Wutzer, in operations for vesico-vaginal fistula, used to puncture the bladder above the pubes in order to convey the urine away, and fastened the patients by straps in the prone position until the effects of pressure on knees and elbows rendered it impossible to maintain it longer. He was compelled, however, to repeat the operation ten or twenty times for the cure of the smallest fistulæ, and could only exceptionally record a complete cure. I, following an absolutely contrary principle, never even introduce a self-retaining catheter, and have often allowed the patients soon after the operation to leave their beds, and go for a walk with the sutures in place. Nevertheless I have already cured more than a hundred fistulæ, most of them by a single operation, and, in common with all operators of the present day, I regard an incurable fistula as an extremely rare exception. But although the mode of executing this and other plastic operations upon, or in the neighbourhood of, the urinary organs, such as that for recto-vaginal fistula, or ruptured perineum, as well as urethrorraphy and urethroplasty in the male sex, has been immensely improved; although it is scarcely now maintained that acid urine hinders union by first intention, yet the doctrine of its harmless effects upon wounds and cicatrices, and especially the fact that no alkaline decomposition is set up in it by the secretion of united wounds, have not yet been so fully recognised as might be desired in the interests of the patients concerned. For American, English, and French surgeons after the operation for vesico-vaginal fistula or similar lesions about urinary or genital organs still always employ the self-retaining catheter, or at any rate believe that they must not allow the urine to be passed at pleasure, but only to be drawn off by catheter. But this precaution, which causes so much inconvenience both to patient and surgeon, and which may set up mischief through irritation of the bladder and urethra, will, with better knowledge, vanish from the after-treatment and give place to the far simpler and more rational mode of management, which I have followed for years with the best results—namely, to provide for the cleansing of the external genital organs and the vagina, and to allow the urine to be passed at pleasure. (*See my article 'On Kolpoplexis and the Operation for Vesico-Vaginal Fistula in Germany,' in this Journal, 1868. Nos. 45 and 46.*)

“In the rare cases in which the urine of a patient, on whom the operation of vesico-vaginal fistula is to be performed, has an alkaline reaction, and is therefore actually injurious, the operator will

endeavour first to render the urine again normal, by treatment of the causes of its alkaline decomposition (extraction of a calculus, treatment of vesical catarrh, &c.). He will never undertake the operation while the urine is alkaline, unless, for other reasons, it is impossible to defer it. In such cases the utmost care must be used in the operation that not a drop of urine may be able to penetrate between the margins of the wound. A self-retaining catheter is not to be introduced, because it would not be tolerated, and by increasing the irritation, might set up acute cystitis. In one case of vesico-vaginal fistula, in which I was obliged to carry out the operation while the urine was alkaline from the effect of obstinate vesical catarrh, I attained the cure by using the most minute care in the execution of the operation; in a second case the attempt failed twice, and I did not succeed in closing the fistula until I had cured the vesical catarrh.

"With regard to the treatment of infiltration of urine, this consists, according to the direction of surgical text-books, in deep incisions into the most prominent parts. It is intended by this means to let the infiltrated urine escape from the tissues, and to allow a free outflow to that which still forces its way through the lesion in the bladder or urethra. But relying on the experiments above described, I would, in a future case, somewhat modify this method of treatment. Instead of the numerous incisions, I would make an opening between perineum and urethra; that is to say, I would perform perineal section, and for the first few days leave in place a catheter passed through the wound into the bladder. The urine already infiltrated I would leave to its fate. In this way the wound produced would be much less than with the treatment hitherto adopted. Any further infiltration would be most completely prevented, the urine having a direct outlet; and the urine already infiltrated would not, as has been hitherto feared, develop any injurious properties, but, as the experiments show, would be re-absorbed without harm. Even when a slough has been already formed, I consider the opening the urethra by perineal section to be the best mode of treatment."

From the foregoing extracts there can be no doubt of the fact that Professor Simon, in 1868, was thoroughly convinced of the value of kolpopleisis, performed for whatever cause, and equally evident is the error into which he had been led as to the extent of my appreciation of it. Had he known that I had employed it only a single time in about the same number of cases that he had then treated, he would not have spoken so disparagingly of my method of operating, and of the methods of other surgeons in comparison with his own. An advance from 64 per cent. of cures, as shown by his old method, to 92½ per cent. under

the new or simplified method, was indeed enough cause for congratulation, and fourteen successful operations out of seventeen—82 per cent.—undoubtedly marked a very high degree of surgical skill. But what was the character of these fourteen cures? The lines in the first extract which I have italicised should be carefully read, showing that five must be subtracted from the fourteen, being the number of cases in which the generative functions were destroyed, when nine—64½ per cent.—of legitimate cures remain, to say nothing about the hiding away of the obliterated part of the urethra in one case, and unusual expedients in the other two.

These results of Professor Simon justify me in putting the question thus: If 35½ per cent. of expedients which destroyed the generative functions were necessary in the treatment of ninety-six fistules in eighty-three patients from 1859 to 1868, when he had reached his highest degree of success, what did they amount to in the twenty-two fistules in twenty-two patients who were treated by his “old, imperfect method” from 1853 to 1859?

Here I may be permitted to tabulate my experience during a part only of the “old, imperfect method” of Professor Simon, extending from May, 1855,\* to June, 1859:—

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\* This was the date (May, 1855) at which I, at Montgomery, Alabama, first associated my new form of suture with incisions and dilatation of vaginal atresias, (gradual preparatory treatment), in complicated cases of vesico-vaginal fistule, and thus established the standard of my form of cure with preservation of the generative functions, to which I have ever since adhered without modification, except in the two cases here noted, both of which occurred before I had fairly perfected my system. Professor Simon, at Darmstadt, as appears from a comparison of his recorded experience with mine, in the same year and in the same month, associated his double interrupted silk suture (*double Nohl*) with his new principle of *helfp-kleisis*, as a means of compensating for loss of tissue, leaving vaginal atresias untreated, entirely sacrificing the generative functions, and so established the standard of his form of cure, to which he adhered with but little modification up to the time of his decease. Dr. Sims, who has unfairly claimed the first success in the treatment of vesico-vaginal fistule in America, was at this date using in New York his defective clamp or quilled suture, *which is totally inapplicable to any form of fistule associated with vaginal atresia*. Fourteen months later, however (June 24, 1856), and only six weeks after the description of my new system appeared in the *Lancet*, Dr. Sims renounced his old form of suture, and employed for the first time the simple interrupted silver suture which he soon afterwards associated with his improved duck-bill speculum, with the folding of the edges of the fistule, and sometimes the cervix uteri into the bladder, and with gradual preparatory treatment of vaginal atresias, sacrificing to a limited extent the generative functions, and thus established the standard of his form of cure, to which he and his followers have ever since adhered, with but little, if any, modification. I had previously (from



Upon 52 fistules in 40 patients 63 operations  
were performed.

„ 44	„ 34	„ 53	„ „
„ 1	„ 1	„ 2	„ „
„ 1	„ 1	„ 1	„ „
„ 4	„ 2	„ 11	„ „
„ 1	„ 1	„ 1	„ „
„ 1	„ 1	„ —	„ „

These were completely cured with entire preservation of the generative functions.

By including the posterior lip of the cervix uteri, with loss of the generative functions (May, 1856).

For kolpoplexis, with restoration of continence of urine, but loss of the generative functions (March, 1859).

These were completely cured, with preservation of the generative functions, but relapsed, owing to the incompleteness of the preparatory treatment (incisions and dilatations).

Patient died on the sixth day, though the autopsy showed complete closure of the fistule.

Considered incurable, and discharged without operation.

The details of the above cases are to be found in the *Louisville Review*, May, 1856, the *North America Medico-Chirurgical Review*, July and November, 1857, and the *New Orleans Medical and Surgical Journal*, January, March, and May, 1860.

I think I am warranted in saying that this series of cases was the largest, and embraced a greater proportion of legitimate cures than had ever been published before by any single surgeon. Forty-four fistules in thirty-four patients, cured in fifty-three operations, with preservation of the generative functions, give a result that scarcely admits of comparison with that exhibited by Professor Simon, even at the date of his "simplified method," nine years later, and points to some other explanation than that of the position of the patient, the speculum, and the silk or silver sutures. What is that explanation? The recognition of the curability of the atresias of the vagina, and the adoption of a successful mode of treating them, simply as a preparatory measure. This I contend to have done almost at the outset of my

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June, 1853, to May, 1855) been a follower of Dr. Sims with his defective clamp suture, and had succeeded in curing only two simple cases of vesico-vaginal fistule out of six (33½ per cent.), which was very little, if any, less than his success with it, according to the results which he has recorded.



experience, and I associated therewith a form of suture which combined advantages in the utilization of nodular tissue which were possessed by no simple interrupted suture, whether of silver or of silk, which had been previously in use. A careful examination of the details of the forty cases which I have tabulated above will show that a very large proportion of them presented very great obstacles. These difficulties were first met and surmounted by means of the knife and the dilator, and afterwards the cases were treated, as regarded the fistules, on general principles.

*(To be continued.)*

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## *Reports of Hospital Practice.*

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### GUY'S HOSPITAL.

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#### A CASE OF VESICO-URETHRO-VAGINAL FISTULA, THE RESULT OF VENEREAL ULCERATION.

By A. L. GALABIN, M.A., M.D.

THE patient, Elizabeth F——, twenty-six years of age, single, a domestic servant, came first among my out-patients in October, 1876. She complained of incontinence of urine, and stated that it had come on gradually about six months previously, being felt at first only while she was walking or standing, continence remaining perfect in the recumbent position. Lately, however, incontinence had been complete. No history of any kind could be elicited to account for it. The vulva and surrounding parts were much inflamed and excoriated, the nymphæ irregular, and the hymen not present. On examination by speculum, the os uteri was found to be abraded. The urine was alkaline, and contained phosphatic deposits. Being in doubt whether the local inflammation could be the result simply of the irritation set up by the urine, or was due to some venereal affection, I sent the patient for the opinion of one of my surgical colleagues. He reported that he found no positive proof of any

venereal causation, and considered that the inflammation might be the result of the incontinence of urine, which was possibly connected with the presence of a sensitive vascular caruncle, which existed at the orifice of the urethra.

The patient was accordingly admitted into the obstetric ward on November 8th, 1876, the urethral caruncle was destroyed by means of the benzoline cautery, and strong nitric acid was applied to the abraded cervix. A few days later the existence of syphilis became manifest. The excoriations around the vulva and anus acquired the distinct character of mucous tubercles; the throat was sore, and a superficial ulceration was discovered on the left tonsil; several spots of scaly syphilitic rash also appeared about the face. The patient was then subjected to mercurial treatment until December 6th, when it had to be discontinued for a time on account of salivation. The mucous tubercles were dusted with calomel powder, and to the excoriations a solution of nitrate of silver, of the strength of ten grains to the ounce, was applied, with the effect of much improving their condition. The incontinence of urine continuing, a further examination was made on January 22nd. It was then discovered that not only had the urethral caruncle disappeared, but the urethra had become completely occluded near its orifice from the effect of the cautery. It was thus evident that a fistula must exist, and a careful digital exploration of the vagina was therefore made, which had hitherto not been done, on account of the presence of syphilis. It was found that at three-quarters of an inch from its orifice, the urethra was drawn upwards and firmly adherent to the posterior surface of the pubes. At this point a diagonal fissure existed, which at first appeared to involve the urethra only. A bent probe was passed through the fistula, and the occluded portion of the urethra divided upon its point by the knife. A catheter was afterwards passed daily, in order to prevent the occlusion again taking place. The patient now confessed, what she had previously concealed, that she had been delivered of a child nearly three years before. This could not, however, be connected with the production of the fistula, the incontinence of urine being only of about six months' duration.

On February 12th, seven days after the end of a menstrual period, it was decided to undertake the operation for cure of the fistula, although the general condition of the patient was by no means fully satisfactory, the manifestations of syphilis not having altogether disappeared, and the urine being still alkaline, with a phosphatic deposit. She had proved incapable of bearing any continuous administration of mercury, but iodide of potassium, in ten-grain doses three times a day, had been given for a week prior to the operation, and was continued afterwards. After trial of the left semi-prone position with Sims' speculum, it was found that this did not bring the fistula so well into view as Simon's exaggerated lithotomy position (*Steiss-ruckenlage*) with the buttocks raised high, and the thighs strongly flexed. The latter was accordingly chosen for the operation. A trial was made of drawing down the cervix externally, as recommended by Simon, but although this could be done without much force, the effect was that the fistula still remained drawn up behind the pubes, and was overlapped by a fold of mucous membrane. The plan was therefore adopted of fixing a double tenaculum forceps near the posterior angle of the fistula, and by this means drawing it slightly downwards. No speculum was used, but the perineum was held back by a large two-pronged surgical retractor, such as are used in amputations. The incisions were made entirely by the knife, and since only half the length of the urethra remained in front of the fistula, and there was, therefore, fear that continence might not be restored, even though the fistula were closed, care was taken to remove the least possible amount of tissue in vivifying the anterior margin, a result which was much facilitated by Simon's position. The fissure previously felt proved to be the entrance of a funnel-shaped opening expanding upwards, lined by cicatricial tissue, and involving all the neck of the bladder. When, therefore, all the cicatricial tissue had been removed, the finger passed freely into the bladder. After somewhat free hæmorrhage had been checked by iced water, the margins were united over a gum elastic catheter by five silver sutures, which were simply twisted, the line of union being diagonal.



The catheter was tied in and connected by an india-rubber tube with a vessel beneath the bed. It was left in place for three days, the bladder being washed out daily, but after that the patient was allowed to pass her urine at pleasure.

There were some signs of bladder irritation for the first few days; and on the 16th, four days after the operation, rather serious symptoms of peritonitis commenced, the pulse rising to 124 and the temperature to  $103^{\circ}.4$ , while the abdomen was tympanitic and tongue dry. On the 21st the pain and tenderness were subsiding, and on the 22nd a menstrual period came on about a week before the expected time, after which she gradually improved. The sutures were removed on the 26th, fourteen days after the operation, having been left somewhat longer on account of the peritonitis. No urine had escaped in the meantime, and the fistula was found perfectly closed. A few drops of urine escaped in the standing position for a few days after the patient first got up, but when she left the hospital on March 14th, continence was perfect.

The foregoing case may be of interest from the fact that the union was not hindered either from the constitutional syphilis, which was still giving evidence of its presence in the shape of mucous tubercles around the labia, from the alkaline condition of the urine, or from the severe febrile condition which followed the operation. The mode of origin of the fistula could not be exactly ascertained. It appeared, however, that it could not have been due to the delivery nearly three years before, although some cicatricial tissue might have been left which afterwards became the seat of ulceration. But whether the lesion was due to a venereal but non-syphilitic sore, to the chancre which communicated the syphilis, or to tertiary syphilitic ulceration, remained uncertain. The last alternative, however, would seem to be almost excluded by the character of the symptoms, which was that of the earlier constitutional manifestations of the disease.

As to the method of performing the operation, I am disposed to think that, in cases of urethro-vaginal fistula, in which union is more difficult to secure, on account of the thinness of the septum from which the margins have to be



cut, and in which it is desirable to attain the utmost possible economy of tissue, in order to secure complete continence after closure of the fistula, the position of Simon has often the advantage over that of Sims. As a testimony to the improvement which has taken place in English obstetrics of late years with regard to an earlier interference in protracted labour, I may add that all the cases of vesico-vaginal fistula admitted into the obstetric ward of Guy's Hospital within the last three years have been cases either of old fistulæ, of from six to ten years' standing, most of which had been previously operated on without complete success, or of fistulæ the result either of venereal ulceration, of attempted operation for atresia vaginæ, or of the impaction of a calculus in the urethra. Not one had been the consequence of recent delivery.

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### Notices and Reviews of Books.

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*Description de Deux Nouveaux Forceps.* Par J. Tarnier, Professeur Agrégé à la Faculté de Médecine, Chirurgien en Chef de la Maternité de Paris. Paris. 1877.

IN this work will be found a description of various new forms of forceps, invented by Prof. Tarnier, and especially of one which is the author's favourite, and which appears, at first sight, to be somewhat complex in character. This has already attracted much attention in France, and has been received with approval by some authorities of repute as likely to supersede the instruments now in general use. Prof. Tarnier enumerates a series of grave defects in the common long curved forceps. They are as follows:—1. That they *never* permit the operator to make traction to the axis of the pelvic canal. 2. That they do not leave the foetal head sufficient mobility to allow it to follow freely the curve of the pelvis. And, 3. That they are not provided with any indicator to show the accoucheur in which direction he ought to make traction. For his own instrument he claims in contradistinction the following qualities:—1. That it permits the operator always to make traction in the axis

of the pelvic canal. 2. That it leaves the foetal head mobility enough to allow it to follow freely the curve of the pelvis. And, 3. That it provides an indicator which shows the accoucheur the precise direction in which, at each moment, he ought to make his traction. It is supposed throughout that the patient is in the dorsal position, which in France is usually adopted for the application of forceps. Prof. Tarnier then assumes that the direction of resultant traction is necessarily in the same straight line with that of the resistance, and not merely parallel to it ; that is to say, that it is in a line passing through a point near the end of the handles, and through the centre of the foetal head. On this assumption he has no difficulty in showing that, if forceps are applied to the foetal head at the brim, and a traction force of 20 kilogrammes is exercised, the effective force tending to cause advance of the head is only 17 kilogrammes, while a useless and injurious pressure of at least 10 kilogrammes is exercised upon the anterior pelvic wall. The same relation holds also in whatever part of the pelvic canal the head is situated, unless the handles of the forceps are so depressed that the direction of the blades deviates from that of the pelvic axis, and a hazardous pressure is exercised on the posterior vaginal wall or perineum.

There can be no doubt that this criticism upon the curved forceps is, in a measure, just ; but the case is stated more strongly than the facts justify. For if the patient be placed in the left lateral position, as is usual in England, it may be mathematically demonstrated that it is theoretically possible to make traction precisely in the axis of the brim, or of any other part of the pelvic canal, although there may be practically much difficulty both in judging exactly the direction of the axis in which the head should advance, and in so adjusting the traction that the resultant force acts in that direction, supposing it to be known. For let us suppose that the operator grasps with his right hand the handles of the forceps, while his left hand seizes them near the position of the lock, either two fingers being rested on the flanges, as in Simpson's forceps, or one finger passed through the space between the shanks, as in those of Lever or Barnes.

If he is well instructed, the right forearm will be nearly in the line of the handles, while the left is inclined to it at an angle of about  $60^{\circ}$ . The line, then, in which traction can most naturally and easily be made is that which bisects the angle between the arms, and is directed straight to the operator's chest. This line is inclined at an angle of  $30^{\circ}$  to the handles, and is, therefore, precisely the desired direction, namely, that of the blades, which is the same as that of the axis of the pelvis where it passes through the centre of the foetal head, if the forceps are rightly applied. If, however, both hands made parallel traction in this direction, the effect would be to carry the handles of the forceps backward, unless resisted by the perineum. If this tendency be resisted by carrying one hand, or both hands, more forward, the resultant traction would deviate into the vicious direction which is denounced by Prof. Tarnier. If, however, as the traction of the right hand is inclined forward, the traction of the left hand is, in equal degree, inclined backward, the resultant effect is no longer a single force, but a force combined with what in mechanics is known as a couple. The resultant force is parallel to the proper axis of the pelvis, and wholly effective in advancing the head, while the couple maintains the forceps in the right position, and no useless pressure is exercised. The left hand does not counteract the effect of the right hand in keeping the handles forward, because the latter has a greater leverage. It may be objected that the great majority of accoucheurs have never studied the mathematics of couples, and that probably many of them have never even heard of the word "couple" as a term in mechanics. Fortunately, however, provided the operator has his arms in the right position, makes his resultant traction in a line bisecting the angle between them, while at the same time, with his right hand, he keeps the handles sufficiently forward, he cannot fail to produce the desired effect, without any regard to theoretical mechanics.

In the dorsal position of the patient this mode of traction would seem to be somewhat difficult to execute. We learn, however, from a criticism by Prof. Pajot upon Prof. Tarnier's work, published in the March number of the *Annales de*

*Gynécologie*, that he is in the habit of teaching it, directing that the right hand should be raised, while the left hand, grasping the forceps at the lock, is depressed in corresponding degree. In his original memoir Prof. Tarnier had entirely overlooked this mechanism, and, in his answer to Prof. Pajot (in the April number of the *Annales de Gynécologie*), he has as completely misconceived its nature, supposing that the right hand is to push in the *opposite* direction to the traction made by the left. Thus he concludes that a force of 60 kilogrammes has to be exercised to produce an effective traction of 20 kilogrammes. That a loss of power does take place is undoubted, and its amount can easily be calculated. Taking Prof. Tarnier's diagram as to the dimensions of the forceps, and supposing the two arms to draw with level force, the traction of the two hands should be inclined about  $40^\circ$  right and left of the middle line (the exact angle is  $\tan^{-1} \frac{1\frac{1}{2}}{1\frac{1}{7}}$ ), and the force expended is to the effective force in the ratio of about 13 to 10.

Having said thus much in vindication of the possibility of so making traction with the ordinary forceps that no useless pressure is exerted, we must admit that, besides the loss of power involved, the mechanism is a difficult one fully to carry out. Probably in most cases it is but incompletely put into execution, and some degree of excessive pressure is put upon the anterior pelvic wall. And in difficult cases, when the operator has to put out all, or nearly all, his strength, he will be likely to pull almost in the same direction with both hands, and thus the direction of the force will be most faulty just when it is most important that it should be accurate. The plan, therefore, by which Prof. Tarnier proposes to avoid this defect is deserving of the most careful attention. His instrument consists of two parts; first, a pair of prehensile branches, which resemble ordinary forceps, except that the handles are curved backward, so their extremity lies in the prolonged axis of the blades—that is to say, in precisely that axis of the pelvis in which traction ought to be made. These are not to be used for traction, but simply grasp the head, and are held together by a screw. The second part consists of two traction rods, which are articulated freely at a joint near



the lower part of the fenestræ, and in the axis of the blades. These are not crossed, but parallel; they have the same curve as the prehensile branches, lie close beside them when in position for traction, and end in a strong transverse handle, which gives a powerful hold to the hands. The whole instrument, when seen from the side, has thus a sigmoid curve. Each traction rod is introduced together with the corresponding prehensile branch, and the adjustment is said to be as easy as with the ordinary forceps.

The author claims that the prehensile branches allow the head to move freely along the pelvic curve, and serve as an indicator to show precisely to what plane of the pelvis its centre has reached. Such an automatic indicator is no doubt highly desirable, if it can be procured, and it is important to examine how far the author's ideal is attained. The first requisite of an indicator is that it shall not, by its own weight or inertia, modify the condition which it indicates. Now, the weight of the prehensile branches, even if lightly made, cannot but be worthy of some consideration; and this weight, situated upon the long arm of a lever, acts at a mechanical advantage of at least four to one against the friction upon the sides of the head which is to prevent the indicator dropping below its proper position. And against the forces tending to produce the normal extension of the head, in opposition to the weight of the prehensile branches, the patient being in the dorsal position, the mechanical advantage is far greater. Moreover, if the extremities of the indicator once became by this means directed too posteriorly, the force exerted upon the traction rods, being displaced in equal degree, would tend to perpetuate and increase the error. Hence with Prof. Tarnier's instrument there would seem to be a risk of exercising undue pressure on the posterior wall of the pelvic canal. It is to be remembered, moreover, that the expulsive force itself exercises undue pressure on the posterior wall, and that even with the ordinary forceps injuries to the perineal body are common, while lesions of the anterior wall, in the shape of vesico-vaginal fistulæ, are very rare. It appears to us, therefore, that the tempting idea of obtaining an indicator of the movement of the foetal head is

delusive, and that the operator does best to trust to his own skilled judgment as to the direction of the axis of the pelvis at the point where the centre of the foetal head is situated. Even though his result is only approximate, it can scarcely fail, in the lower part of the pelvis, to be much nearer the desired direction than the natural expulsive force.

The other part of Prof. Tarnier's object—namely, to afford a ready means of making traction precisely in the direction of the axis of the blades at any part of the pelvic canal—remains of the highest importance. Attempts have previously been made by two Belgian obstetricians, Huberts and Moralés, to construct an instrument fulfilling this requirement, and the forceps of the latter appear to be very well conceived. Prof. Tarnier points out, however, that the backward curve given to the handles is not quite sufficient to bring them into the same line with the prolonged axis of the blades. His own second variety of forceps would seem to fulfil the conditions in a simpler manner than his more complex instrument. In this the handles are curved backward until they reach the prolonged axis of the blades, and are there jointed to a movable straight portion in the same straight line with that axis. This can be reversed or fixed transversely, and in the latter position affords an admirable hold for traction. The author proposes, even with these forceps, to carry out his favourite idea of affording an indicator, and allowing mobility to the foetal head. This he does by dividing the fenestræ by a diagonal bar. This affords a hold to loops by which traction is to be made in the axis of the blades, instead of by the handles. This plan appears to be still more open than the other instrument to the objections which we have already noted. As regards its shape, however, we think that this form of forceps is well worthy of the attention of British obstetricians. Prof. Tarnier's whole work should be read by all who take an interest in the mechanism of delivery. It is illustrated by forty-three admirable engravings, which show in the clearest manner the various mechanical points involved, as well as the various forms of instrument which have been devised by the author and his predecessors.

## Abstracts of Societies' Proceedings.

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### OBSTETRICAL SOCIETY OF LONDON.

*Meeting, May 2nd, 1877.*

CHARLES WEST, M.D., F.R.C.P., *President, in the Chair.*

The following gentlemen were elected Fellows of the Society:— Thomas Henry Barnes, M.D. (Croydon); Eustace J. Carder, M.R.C.S. (Fulham); John Dewar, L.R.C.P. Ed.; Patrick Jamieson, M.D. (Peterhead); J. Jardine Murray, F.R.C.S. Ed. (Brighton); and John Cooke Veilo, M.D.

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#### *Apparatus for Exhibiting Uterine Injections after Delivery.*

Dr. ROBERT BARNES showed, for Dr. Bernard, of Londonderry, an apparatus for facilitating the injection into the uterine cavity, after labour, of water or perchloride of iron. It is made of india-rubber, and consists of a band which passes over the operator's hand. It carries a tube on the palmar aspect, which divides into three branches, so as to distribute the injection. There are also numerous small holes to scatter the fluid. With this instrument the operator's hand is conscious of all that goes on.

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#### *Pessary.*

Dr. BARNES also exhibited, for Dr. Scott, of Canada, a pessary for complete procidentia uteri. It was constructed of wire, covered with rubber. The upper part consisted of a loop, which was intended to rest behind the cervix. The stem curved backward, over the perineum, and was supported, like Cutter's pessary, by a band which passed posteriorly. It thus was able to yield with the movements of the body. He had used it in about half a dozen cases, and found it to answer well. The patient could place it herself. The instrument could be obtained from Messrs. Blaise or Weiss.

Dr. HEYWOOD SMITH asked if the instrument was put forward as a modification of Cutter's pessary.

Dr. BARNES replied that it was not so stated by the inventor, but it appeared to be similar in principle.

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The PRESIDENT announced that Mr. Spencer Wells' paper on Uterine Tumours associated with Pregnancy, would be read at either the June or July meeting of the Society.

*Fibroid Tumour.*

Dr. WILTSHIRE exhibited, for Dr. Hadden, of Horncastle, a specimen of fibroid tumour of the uterus. For three years the patient had suffered very severe floodings, but all operative interference was refused, although the case was thought a suitable one for enucleation. On one occasion, the floor of the patient's house having been flooded with blood, the wise woman of the village, as a remedy, made her eat the clots—probably a nutritious and recuperative diet. At the autopsy the uterus was found adherent to surrounding parts, and the tumour lodged in a capsule, out of which it could have been easily enucleated.

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*Ascites combined with Distension of the Bladder in a Fœtus.*

Dr. GALABIN showed a specimen of a fœtus which had presented great obstacle to delivery. The mother was twenty-one years old, and had previously had one miscarriage. Labour was protracted, and the pulse rose above 120, although the presenting head was very small. The funis was twisted tightly three times round the neck, and a second head could just be reached high up. The first head was drawn down externally by forceps, and the fœtal abdomen was then found to be distended. Pulsation in the cord having ceased, it was divided, but no advance was gained. The abdomen then was perforated through the diaphragm, and clear fluid evacuated. The fœtus soon again became arrested, and a tense tumour was felt in the lower part of its abdomen. This also was perforated, and proved to be the distended bladder. The child was a male. There was much œdema of the abdominal wall from the umbilicus downward, and of portions of the funis, but no general œdema. The head of the second fœtus was much flattened, and only one fœtal heart had been heard, that corresponding to the child first presenting.

Dr. HEYWOOD SMITH inquired whether there was any morbid condition of the placenta.

Dr. GALABIN replied that it was healthy.

Dr. BARNES remarked that ascites in the fœtus was sometimes associated with degeneration of the placenta and albuminuria in the mother.

The PRESIDENT remarked that the specimen was a very uncommon one, and asked Dr. John Williams to examine and report upon it in conjunction with Dr. Galabin.

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*On a New Mode of Treating Certain Cases of Retroflexion of the Unimpregnated Uterus.*

By JAMES BRAITHWAITE, M.D., Leeds.

The author remarked that the application of Hodge's pessary, combined with the occasional use of the sound as a redresser,



sufficed for most cases of retroflexion, but there were some in which it failed. In these the only plan we had hitherto had to fall back upon was the continuous use of an intra-uterine stem. This was objectionable, since it acted as a foreign body, and kept up hyperæmia. For such cases the plan of treatment described in the paper was advocated. It was deduced from the principle that to straighten a stick the most effectual means was to bend it in the opposite direction, hence, to straighten a retroflexed uterus, temporary antelexion should be produced. As a preliminary measure, he dilated the os uterus with a sponge tent, which he preferred to one of laminaria. If it could not be introduced past the point of flexion, he passed the first tent up to that point, and on the following day passed a second tent beyond it. The effect was to soften the uterus, to render it easier to undo the flexion, and to make the uterus more tolerant of the instrument afterwards used. This consisted of a brass wire, eight or nine inches long, soft enough to be easily bent. For introduction into the uterus, the last two inches of the wire was covered with india-rubber tubing, which fitted it tightly, and was closed at the end. This uterine portion was limited by a button at its proximal extremity, about two inches from the end, so that it did not reach within a quarter of an inch of the fundus. It was bent into such a shape as to hold the uterus in antelexion. It was then introduced with the concavity backward, and rotated, as in redressing the uterus with the sound. An air-ball pessary was afterwards threaded over the wire, passed up as far as the button, and distended sufficiently to hold the whole instrument in position. Finally, the external portion of the wire was bent backward over the perineum, so as to occupy the sulcus between the buttocks. The instrument could not escape, get out of position, or enter further into the uterus; and there was no risk of injury from movement of the patient. It should be worn for four days, during which the patient should remain in bed, and opium should be administered. On its removal a Hodge's pessary is put in position. The uterus being now large and soft, ergot is given in large doses at long intervals, and water-douches administered. The author considered that the uterus is more ready to contract, and thus maintain itself in normal shape, after the withdrawal of the stimulus of an intra-uterine instrument which has been used for a short time only. The plan of treatment was, however, only recommended for extreme cases.

The author had cured the retroflexion in four cases which he had treated in this manner. In two others it was tried, but had to be abandoned. In the first, pain was produced by the use of the tent. Slight metritis was set up by the application of the instrument. It had very soon to be withdrawn, and but imperfect success was attained. In the second case, the instrument was inadvertently introduced on the day when a period was due. Violent pain was

caused, and the instrument was expelled. This showed that the uterus itself helped when stimulated to action.

Dr. PRIESTLEY then said that some years ago Dr. Moir, the then President of the Obstetrical Society of Edinburgh, had recommended the dilatation of the uterus by sponge tents in cases of persistent retroflexion of the unimpregnated uterus, and the insertion afterwards of an intra-uterine stem with an oval-shaped bulb half way up, corresponding to the bend in the retroflexion, in order to produce a thickening at that point. He could not say what results had been obtained by this method, but Dr. Braithwaite's plan was the same, so far as the dilatation of the uterine cavity was concerned, although the latter part of the process was different.

Dr. BARNES was slow to resort to internal until external means had failed. Hodge's pessary rarely failed. All intra-uterine supports, however ingenious, must cause a certain amount of chafing; they also fix the uterus. The organ should not be fixed. When all the means had failed, intra-uterine supports might be tried. Before introducing a Hodge, the displacement should be reduced. The action of the Hodge was gentle and safe, and when the uterus was once restored it could be worn with perfect ease. The cure was as complete as with intra-uterine instruments, for in that case also recurrence might take place. Professor Wallace, of Philadelphia, had shown him intra-uterine pessaries made of compressed sponge over a watch-spring curved back. As the sponge softened, the spring was liberated, and gradually restored the uterus. No external support was used. The inventor gave extremely good cases of the result of this treatment, especially when the fundus was locked under the promontory of the sacrum.

Dr. GRAILY HEWITT thought the instrument ingenious, and carrying out a necessary principle of treatment of flexion—viz., flexion in the opposite direction. He had done this by means of the sound, passed from time to time, reversed, and so held in position for a quarter or half hour. This, with the introduction of a modified Hodge, and the prone or semi-prone position, usually proved successful even in obstinate cases. There were some cases where the difficulties of treatment were almost insuperable, owing to adhesion of the uterus posteriorly, thinning of the uterine wall at the point of flexion, the chronicity of the flexion, and the hardness of the uterine tissue. He preferred, if possible, the avoidance of intra-uterine stems in retroflexion. Their difficulties and dangers were not light, and he used them only to a *very* limited extent. But if any intra-uterine treatment were to be adopted, Dr. Braithwaite's plan appeared admirable, especially his method of previously dilating the uterus. It should be recognised that there were limits to the possibility of cure, and that no permanent cure could be expected if there were much attenuation of the posterior uterine wall. In such cases the mere unbending of the uterus gave much distress. Another class of incurable cases was that of very old retroflexions in old women

with rigidity of the uterus. Such difficult cases, in which it was sometimes necessary to relinquish the attempt at cure, were no doubt very rare. They often obtained much alleviation from Hodge's pessary.

Dr. ROUTH said the instrument presented many points of ingenuity. Some of them were not new, such as that the pessary was not of the full length of the uterus, and by this means irritation of the fundus was avoided. Dilatation by tent he had practised for many years, but instead of using sponge tents, he employed laminaria, bent into the shape of the uterine cavity. This instrument fastened behind like Dr. Priestley's, and unlike Sir James Simpson's. The ball in the stem was new. He thought that the instrument would not answer in cases of soft uteri, which turned sometimes one way sometimes another; and that it was very extraordinary that a cure should be effected in four days. The discharge and irritations produced by an intra-uterine stem was sometimes most efficacious in curing, even when it went so far as to set up, cellulitis. The thinning of the uterine wall was by that means remedied. Dr. Muirhead's pessary acted in the same way, for it produced in his hands much inflammation. It was desirable to set up, a certain amount. He would like to know what was the previous duration of the four cases, and whether they remained cured.

Dr. MEADOWS said that younger members of the profession must be puzzled when experiences differed so widely. This subject was often discussed, and differences of opinion appeared to be on the increase. The discussion to-night would not allay the difference. He himself was quite opposed to Dr. Barnes and Dr. Graily Hewitt. The latter said that the thinning of the uterine wall was on the inside of the curve. He held exactly the opposite. When an india-rubber tube was bent, it was thinned on the convex side, and it was the same with the uterus. In a few cases which he had seen post-mortem, this was the case. There was a good instance of it in the Middlesex Hospital Museum. He was opposed to Dr. Barnes as to the use of an intra-uterine stem. He constantly found Hodge's pessary to fail, and not unfrequently to be injurious. If a sound were used after the Hodge was placed, the fundus would be found to be on the top of the Hodge. The views of displacement were too mechanical. Of mechanical means, the intra-uterine stem was far the most efficacious, and not mischievous, if of the proper kind. He often used it, and rarely saw any mischief from it, even in retroflexion. He would be sorry to endorse Dr. Routh's opinion that the production of slight inflammation is beneficial. This would be doing evil that good may come.

Dr. BANTOCK was surprised to find that retroflexion was still treated by means of a Hodge. The instrument was of use in retroversion, but of no use in retroflexion. A stem alone could effect a cure. Stems did not give rise to uterine contraction or hypertrophy. The effect of introducing a small bougie into the uterus was to cause relaxation, so that a larger one could be introduced next day. Re-



troversion with ante flexion was very difficult of cure, and cure could be effected by stems alone. He related an obstinate case which he had successfully cured. He first used one of his own stems with a Hodge's pessary. The fundus toppled over the posterior limb of the Hodge, and the stem slipped out by the next day. He then used Meadows' compound stem, in which a stem is fixed by an india-rubber band at right angles to a frame. This kept the uterus in admirable position. After three months' wear it was taken out, and the patient allowed to marry. She was now three months' pregnant.

Dr. GALABIN asked whether Dr. Braithwaite had tried a modification of his instrument in cases of ante flexion? His own experience was, like that of Dr. Barnes and Dr. Graily Hewitt, that cases of retro flexion were very rare in which perseverance with Hodge's pessary, with the occasional use of the sound, was of no avail. But the treatment of ante flexion by vaginal pessaries was much less satisfactory. One reason of this was that, when a retro flexed uterus has once been restored, the pressure of the intestines comes to act, as it normally does, more on the posterior than the anterior surface of the uterus, since there is more room for them behind the uterus than in front. In this way, the cervix being drawn backward by Hodge's pessary, a natural force of a gentle and continuous kind was called into play for the cure of retro flexion, to which there was nothing analogous in cases of ante flexion.

Dr. ROGERS said that although there was much difference of opinion, all must admit that Hodge's pessary sometimes failed. He himself found it do so frequently. He had used intra-uterine stems extensively, and with the best results, first applying leeches, if necessary. It was not the practice at the Samaritan Hospital to set up inflammation intentionally. He had found elastic stem pessaries of much use in many cases.

Dr. HEYWOOD SMITH agreed with Dr. Meadows in his advocacy of constitutional treatment as of more importance than mechanical. The latter should generally be preceded by the use of leeches, or other depletory measures. Hence there were more failures among the out-patients of hospitals than among in-patients or in private practice, because the out-patients could not be put into a proper condition for treatment, nor could they obtain sufficient rest.

Dr. E. J. HICKS said that opinions as to the value of pessaries were very various, and there was no agreement even whether flexion produced any symptoms at all. General physicians said it did not. The flexion was not the only thing to be regarded, but the general state should also be treated. If local inflammation were excited by pessaries, the uterus was likely to be put into a worse condition.

Dr. MURRAY considered that pessaries were used much too frequently, and often in cases in which no discomfort arose from the flexion. He generally succeeded with Hodge's pessary, but in seven or eight cases had used intra-uterine stems. He had seen no ill effects



from them, and had always been able to introduce them without dividing the os uteri, as some had advocated. The best form of stem was that of Dr. Wynn Williams.

Dr. WYNN WILLIAMS said he recommended stems in anteflexion, but not in retroflexion, and he had only once used one in the latter. This was a case which he had cured by one of his stems, supported by an india-rubber septum. The patient had been many months without benefit under the most eminent obstetricians of Dublin, and a Hodge's pessary could not be endured. A Hodge often failed because it was not long enough to reach the fundus. Before placing it, he restored the uterus with the sound, and passed the pessary over the handle. Before the sound was withdrawn the patient was made to cough and move, to insure it not being displaced afterwards. At first the Hodge should be as large as could be worn.

Dr. WILTSHIRE said that every one would be astonished at Dr. Bantock's statement that Hodge's pessary was useless in retroflexion. It was most useful in such cases. The intra-uterine stem was effective, and useful for very rare cases, but was an exceedingly dangerous instrument. Great benefit often resulted from simple restoration by the sound, combined with the use of the prone position, without any pessary.

Dr. BEIGEL said that pathologists paid little regard to female genital organs, and obstetricians were generally debarred from pathology. Hence arose great disadvantage to the science of flexions. He had recently examined about 500 uteri, and was surprised to find how little was known as to their pathology, and how little of what was stated in books was true. Of flexion he had only found ten or twelve cases in the 500. In these there was no change whatever of the uterine walls, even as seen by the microscope, and certainly no thinning of either side. Sometimes the sound could not be introduced, because the lining membrane was glued by inflammation. Nothing was so prejudicial as to set up even the *smallest amount* of inflammation. No one could tell where it would stop, or where it would draw the uterus. Any irritation within might set up by sympathy peri-uterine inflammation. It was very rare to find post mortem the genital organs perfectly normal. Signs of old plastic inflammation, especially about the tubes, were extremely common. As to treatment, he could not understand how a vaginal pessary could benefit a flexion. The uterus required very great power to straighten it; and the only means of cure, though one not always applicable, was an intra-uterine stem.

The PRESIDENT said that he spoke somewhat as representing the outsiders. It struck him as remarkable in what very different lights the same gentlemen regarded the uterus at different times. At one time all manner of sympathetic effects were attributed to it; at another it was considered more tolerant of treatment—not to say maltreatment—than any other organ. Sydenham truly said that it was the duty of those who practised medicine to find out indications

for treatment rather than special remedies for this or that condition. The great point to aim at with regard to flexions of the uterus was to distinguish the different classes of these displacements and lay down rules when treatment should not be adopted because unnecessary or not beneficial. Great ingenuity had been shown in devising mechanical contrivances, but this might lead to mischievous practice. It should be remembered that the Society should lead the medical profession in a particular branch. The result of Dr. Braithwaite's work was hardly such as to be encouraging. In one of his cases the uterus righted itself spontaneously, in two the treatment failed, in one the dilatation by tents could not be borne. And to gain this result the patient was subjected to very severe suffering, lying on her side for four days, and passing her urine into a sponge. It should be an extreme case to lead us to adopt such a treatment. Some cases of flexion needed no treatment; in a second class the suffering was from congestion, and was relieved by the cure of this; a third class, including especially cases where adhesions existed, would not bear treatment. Madame Boivin had written a tract on the frequency of a retroflexed uterus bound by adhesion as a cause of repeated abortion. Other flexions depended on the presence of fibroids, and in these the congestion should be chiefly treated. Virchow showed that thinning of the uterine wall took place on the concave side of the flexion, and brief treatment could not cure such a condition. Then a condition found so rarely post mortem as flexion is, according to Dr. Beigel's observation, could not be of very great importance. Stems were objectionable because of the risk of inflammation. The great principle of treatment should be, not to do harm if good could not be done. The effect of using stems might be like setting a house on fire in order to discover a treasure within it.

Dr. BRAITHWAITE stated that the treatment described by him should be followed in exceptional cases only. Hodge's pessary was usually efficient, but in some rare cases it failed, and recourse must be had to stems. Cure was not effected in four days, but the uterus was placed in position for recovery, and the application of a Hodge then became effective.

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## OBSTETRICAL SOCIETY OF DUBLIN.

*Meeting, January 13th, 1877.*

THOMAS DARBY, F.R.C.S.I., *President, in the Chair.*

Dr. ATTHILL showed two specimens of polypi, one extra-uterine, the other intra-uterine, both removed from unmarried women. In the latter case the patient was sent in for menorrhagia, and five sea-tangle tents were introduced in order to explore the uterus. On their removal the external os was too small to allow the passage of an écraseur, but the lower edge of a polypus could be just touched.

With Gooch's canulæ adapted to an écraseur, he succeeded in carrying a wire round the pedicle, and removing the polypus. The patient was thus spared the danger of prolonged dilatation. Nevertheless she had a rather sharp attack of pelvic cellulitis, which had lately been almost epidemic in the hospital.

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*Syphilitic and other Tumours of the Labia and Clitoris.*

By M. A. BOYD, F.R.C.S.I., M.R.I.A.; Surgeon to St. Michael's Hospital, Kingstown.

The cases which I beg to bring under your notice this evening are records of some that have come under my own observation from time to time, and I deem them of sufficient importance to lay before the Society. In nearly all the handbooks on diseases of women the diseases of the external organs of generation are only noticed in a cursory manner, a mere glance being given at a great many that are by no means rare, and of some there is no mention made at all. This may be in a great measure owing to many of these diseases in themselves causing so little inconvenience to those who suffer from them, and in general interfering so little with their general health that delicacy alone may prevent their subjects making more frequent mention of them.

I think the diseases involving these parts of exceeding great interest to the obstetric surgeon, and by no means so rare as most authorities would lead us to suppose from this desultory mention of them. They are certainly not of so much importance as diseases of the cervix and uterus as to merit a primary place in our consideration; yet some of them, by their long continuance, exercise such a prejudicial effect on the mind and spirits of the patient as in the end to affect the general health, and call for operative or other interference on the part of the surgeon.

The first case I will call your attention to is that of tertiary syphilitic enlargement of the clitoris, and though a good deal of doubt surrounded the diagnosis of the case in the beginning, the evidence of syphilitic contamination of the system was found to be so manifest that none could be entertained as to the nature of it ultimately.

Eliza F., aged thirty-eight years, a widow without children, and menstruating regularly, was admitted to St. Michael's Hospital, Kingstown, in September last, with an ulceration of the leg, of long standing; and from the shape of the ulcer and character of the discharge, I concluded the case was one of tertiary syphilitic ulceration. As there was no evidence to support this in the history she first gave of her case, I was in a good deal of doubt, but while under treatment she called my attention to a tumour on the external genital organs, from which she suffered for some years. On making an examination, I found an enormous tumour springing from, and continuous with,



the clitoris, which organ was thickened to the size of the index finger, and formed its pedicle, and from this it branched out into lobes and tuberculated masses with deep fissures between, exactly like a cauliflower in shape. It was of a pale pink colour, and when the pedicle was compressed became of a livid tint; round the labia majora and perinæum were several smaller tuberculated growths, and the integument between them had a brawny, greasy appearance. There was continual incontinence of urine, which was a source of great annoyance to the patient, and resulted from displacement and elongation of the meatus, due to the great weight and dragging of the tumour; it was dilated to three times its natural size, and the finger could easily pass through it into the bladder. On closer examination there was detected on the legs and body of the patient the remains of a tertiary syphilitic rash. She first noticed the enlargement of the clitoris about five years ago, previous to which she contracted gonorrhœa from her husband, but did not remember having had sore throat or any rash subsequent to or prior to that period. There was a continual thin watery discharge from the fissures between the lobules of the tumour, and occasionally pruritus of the vulvæ.

As there could be but one opinion regarding the treatment of the case—namely, extirpation of the entire mass—I placed the patient under chloroform, and with the knees well drawn up and everted I transfixed the pedicle of the tumour with a hare-lip pin, and, carrying a needle armed with a stout silk ligature between it and the base of the pedicle, strangulated it in two segments. I then, with one stroke of a scalpel, cut away the tumour in front of the needle, which I allowed to remain on the stump. Not a drop of hæmorrhage followed. The patient complained of a good deal of pain after the operation, which was relieved by a morphia suppository and some carbolic oil, and lint was applied to the cut surface. On the fourth day both needle and ligature came away, and at the end of ten days the raw surface was entirely healed. The patient was put on a course of bichloride of mercury and bark, and in the course of a week or fortnight was able to leave the hospital, and resume her usual occupation. The incontinence of urine had also disappeared.

Had I a sufficiently strong battery near me to heat the wire, I would most certainly have removed the tumour by the galvanic écraseur, as the case was a most favourable one for operation by this method.

By the introduction of the hare-lip pin through the pedicle, I insured the ligature against the danger of slipping off, and was enabled to remove the tumour at one operation. The usual rule in tumours of the kind is, I believe, to strangulate their base, and leave them to slough off; but I need hardly say how sickening to a patient and disgusting to the attendants the decomposition of a tumour of this kind would be removed by such a method. The tumour was elastic to the feel, and quite painless in its growth from the beginning; it weighed over six ounces.



A case somewhat similar to the one just related came under my notice some years since in the Rotunda Hospital, the notes of which I have preserved.

Mary H., aged thirty-five years, two years married, was admitted to the Rotunda Hospital suffering from pains which she considered were due to premature labour. She was about six or seven months pregnant, and contracted syphilis from her husband two years previously. On attempting to make an examination it was found impossible to introduce the finger into the vagina, the orifice of which was almost entirely occluded by a hard tubercular mass as large as an egg, which was found to spring from the margin of the perinæum and left labia; it had been growing for six months previously, and was rather painful to the touch; it differed from the case already described in being sessile in its attachment, quicker in its growth, harder to the touch, was of a purple appearance, and deeply cracked and fissured, and considerably œdematous; the cracks also gave exit to a puriform, very foetid discharge. There was an extensive copper-coloured rash all over the body, and the patient had all the glandular engagements of secondary syphilis. As there were no immediate symptoms to indicate the approach of labour, an operation was spoken of for the removal of the growth, as it would offer a most serious impediment to the descent of the head, but the patient would not consent to it, left the hospital, and I afterwards lost sight of her. That this growth was the product of secondary syphilis there could be no doubt, and whereas the former tumour approached more nearly to the hypertrophic character in the painlessness of its growth and soft integumental feel, and in its colour, which was little different from that of the clitoris in its normal state, the latter, from its angry inflamed appearance and puriform discharge, showed more of the indurated character of secondary syphilitic growths.

Warty growths springing from the labia, clitoris, or margin of the perinæum I always look upon as of syphilitic origin, though this is doubted by some authorities. I have never seen warts springing from these situations in any case that there was not the most conclusive evidence of their being syphilitic. I will certainly allow that warts may spring from any portion of the cutaneous surface, but when once they invade the mucous membrane of this situation, or spring from its margin, we may at once stamp them as being syphilitic. They may sometimes spring from the integument here when they are general on other parts of the body, and non-syphilitic; but when we find them here and absent elsewhere, we may conclude they are syphilitic, and may make this fact the grounds of our diagnosis. They generally grow in clusters or bunches, are very vascular and elongated, and cause a very considerable muco-purulent discharge, and occasionally pruritus of the vulva. With regard to their treatment, I have found simply powdering them over with calomel once or twice a day sufficient for their removal when not very large or numerous. If this is not successful, the dried sulphate of zinc used

in the same manner will be found to succeed, snipping off with a scissors those that are very long or hard.

Primary syphilis, or hard chancre, which almost always occurs on one or other of the greater labia, is so characteristic in its appearance, and accompanied by so much induration of its base, that I need not here describe it in detail. Every practitioner is so familiar with it that it would be impossible to confound it with anything else. The induration is oftentimes the only symptom we find present—the ulceration that accompanied it in the beginning having healed previous to contamination of the system.

Simple hypertrophy of the clitoris I have often seen without there being the least grounds for believing that it was in any way connected with syphilis, but to what cause it may be due I am at a loss to explain. It sometimes causes very troublesome pain and soreness, especially after much exercise. Œdema of the clitoris and prepuce I have frequently seen associated with an acute attack of urticaria or eczema of the body. Cooling and astringent lotions, such as the lead lotion, or sulphate of zinc with watery extract of opium, seldom fail to give relief. Simple hypertrophy of one or both labia minora occurring in this country without any syphilitic taint of the system has been noticed by different writers, and a case of it came under my observation some time since.

Mary D., an unmarried woman, aged thirty, consulted me two years ago for a swelling of the right labia, from which she suffered for three years previously. It did not cause her much uneasiness, unless after much exercise, when it became acutely painful and swollen. It was gradually enlarging from the time she first noticed it till she consulted me. On examining her I found the labium minus extended an inch or an inch and a half beyond the external labium; it was slightly œdematous, but did not differ in consistence from the labium of the opposite side, which was normal in size; the mucous membrane covering its inner aspect was rough and granular to the feel, and there was considerable leucorrhœal discharge, but there were not the slightest symptoms of syphilis in any form. After using various astringent applications for some time without any effect, I put the patient under chloroform, and by two longitudinal incisions through its base removed the entire labium. A small artery supplying the base of the growth spouted after its removal, the hæmorrhage from which was easily arrested by torsion. Having brought the lips of the wound together by a few points of silk suture, the wound healed in a few days. I saw the patient some months afterwards, and she said she felt quite cured, the soreness had altogether disappeared, and she was able to take any amount of exercise without inconvenience. Cases of this kind are rare in this country, but among the negro women the labia minora sometimes attain an enormous size by simple hypertrophy, cases being recorded by trustworthy writers where they were so elongated as to reach the knee.

The next class of tumours I beg to call your attention to are vas-

cular tumours of the meatus, and of all the morbid growths that attack the external genital organs of women, these are probably about the most numerous, the most troublesome to the patient, and the most creditable or otherwise to the surgeon in the relief afforded by their removal. I know of no morbid growth (and in this I think I will be borne out by the majority of the members of this Society) which for its size causes so much pain, which generally occurs in an inverse ratio to its size, for the smaller the tumour the greater the pain, or one that can be more easily overlooked by a careless or insufficient examination, for the tumour when small is often entirely hidden from view, and it is only by paying attention to the uneasiness a patient exhibits in making an examination that we will be able to light on the exact situation of the cause of the suffering. These tumours I have seen occurring in women of all ages, but most generally in women who had passed the climacteric period. The first symptom the patient generally complains of is a desire of frequent micturition, with a sense of burning or scalding following it, and supra-pubic and lumbar pains. I have seen in a great many instances the true cause of these symptoms overlooked, and the patient treated for vesical irritation, or urinary concretions in the bladder, when a careful examination would at once indicate the nature of the disease. On attempting to make a vaginal examination in a case of this disease, you will find the moment you begin to introduce your finger the patient will generally start and cry out with pain, and the moment you come in contact with the orifice of the meatus or the tumour contained in it the suffering becomes sometimes intolerable. On everting the labia and examining the meatus, you will find a small red granulation, which the slightest touch will bleed, filling up its orifice, sometimes exceedingly small, sometimes as large as a strawberry, which it resembles very much in appearance.

With regard to the pathology of these growths very little has been added to our knowledge since Clarke so accurately described them; they seem to be true vascular tumours or arterial nævi, highly endowed with nerve filaments, and bear some resemblance to the vascular hæmorrhoid of the rectum described by Houston. The plans of treatment for the extirpation of these vascular tumours are various—drawing them out with a forceps, and snipping them off with a scissors, seems to be the one most generally approved of, but the hæmorrhage after this method is sometimes very considerable, unless some caustic or the actual cautery be applied afterwards, both of which are exceedingly painful. Nitric acid has also been recommended, but its application is most painful, and it is difficult to protect the surrounding parts from injury. Of all the methods of treatment I am acquainted with, I know of none more effectual or less painful than the galvanic wire or cautery. By drawing them forward out of the meatus with a forceps, and encircling them with the wire, their removal is only a matter of seconds, and neither pain nor hæmorrhage follows the operation.



Fatty, fibrous, or cystic tumours of the external labia, though generally very rare, are sometimes met with. I saw not very long since a case of fatty tumour of the right labia. I was called to see the patient for retention of urine, and when about to pass the catheter discovered a tumour about three inches long springing from the right labia. The subject of it was an unmarried woman about forty years of age, and the tumour had been growing for over six years. When she first noticed it it was about the size of a small marble, and it gradually and painlessly continued to increase ever since; it was pedunculated, and had the usual feel of a fatty tumour, and puncturing with an exploring needle confirmed its nature. I advised the patient to submit to its removal, but she declined, as it caused her so little inconvenience. Fibrous tumours of the labia I have never seen, but several such tumours have been described and removed by various authors. They sometimes attain a very large size, and their diagnosis is in general not difficult. When they are allowed to grow for some time without interference, their tendency is to become pedunculated, when their removal is rendered easy by either knife or *écraseur*.

At the last meeting of this Society a very interesting tumour of the labia was exhibited by Dr. Atthill; it was of enormous size; began as a soft elastic swelling in the left labia, about the size of a walnut, when first noticed about a year previously. It was an encysted tumour, and belonged to the class known as myxomatous. It is a very unusual form of tumour.

Abscess of the labia I have frequently seen; they generally occur in the sulcus between the large and smaller labia, and result from blocking up of some of the sebaceous glands in this neighbourhood, followed by inflammation and suppuration. The patient first generally complains of pain after exercise, with a sense of burning or throbbing, followed by swelling of the external labia, and pain in the groin of the affected side, the glands of which may be enlarged. I have seen it as often in unmarried as married women, and it invariably results from want of cleanliness. I have also seen it result from scabies or eczema of the pudendal region. When the abscess forms, puncturing it with a lancet, followed by warm fomentations and poultices, with rest in bed, will effect a cure in a few days.

Cystic tumours of the labia are not at all unusual, but in their growth are so painless and so little inconvenient that the surgeon is seldom consulted regarding them. I have met them in four cases, in all of which they sprang from the margin of the greater labia close to the perinæum; none of them attained a larger size than that of a good-sized marble, and the smallest was not larger than a pea. In one case, that of a married woman, aged forty, the tumour was the size of a large marble, sprang from the inner side of the greater labium on the right side, and was of four or five years' growth. On puncturing it with a grooved needle, which I did after a careful examination, it gave exit to a thick glairy mucus. I then opened it up by a long incision, and cauterised its cavity with the solid nitrate



of silver. Some suppuration took place, which continued for a considerable time, but ultimately ceased, and the tumour disappeared, leaving only a small puckered cicatrix to indicate where it had been. These cysts sometimes attain a very considerable size—cases being on record where they have attained the size of an orange; they are always painless in growth, are very superficial, and become troublesome only by their size. After tapping they generally fill again, like all cystic tumours, and are best dealt with by being entirely removed when not very large. Cutting a slice out of the cyst wall is another method that has been recommended for their removal. This is certainly a very good method when the tumour is large, and when some irritant is applied to their cavity in addition, such as nitric acid or nitrate of silver. They may be sometimes confounded with a hernia, and the practitioner should by a careful examination ascertain the true nature of the swelling before he has recourse to any operative interference. With regard to their pathology, they are due to obstruction to some of the mucous follicles which exist in this situation.

Malignant disease attacking the external organs of generation would seem to be rather rare in comparison to the number of cases of this disease that are met with affecting the cervix and vagina. Though I have met with several cases of the latter among the external patients of the hospital, I cannot say that I ever met with a case of scirrhus beginning in the labia or clitoris. Cases of this form of cancer are, however, recorded by different authors. It generally begins in either nymphæ as a painful tumour, of stony hardness, preceded for some time by troublesome pruritus of the vulva, which would seem to be its most characteristic symptom, and it involves the clitoris secondarily. All the authorities who have described it have met with it principally in one or other labia, and the subjects of it were all women who had passed the middle period of life, and showed in conjunction the cancerous cachexia. When seen early the only chance of prolonging the patient's life is extirpation by the knife, as caustics in any form of cancer are both painful and unsuccessful in removing the entire disease.

Epithelial cancer rarely, if ever, attacks the nymphæ or clitoris, and seems to confine itself entirely to the mons veneris or external labia. I saw a case of it some time since, the notes of which I preserved. Alice T., aged sixty, the mother of four children, all living, consulted me for a swelling and enlarged suppurating glands in the groin, the discharge from which was very foetid. On examining her I found the right labia almost covered by a round epithelial cancer, with indurated edges and rough, warty-looking granulations, from which there was very little discharge. It began as a small wart about five years previously, which gradually enlarged—the glands in the groin becoming enlarged, and ultimately suppurating, five or six months previous to my seeing her; a large hernia could also be felt in the groin above the suppurating gland, which escaped from the abdomen under Poupart's ligament, through the softened and ulcerated parietes.

The patient shortly afterwards died, worn out from exhaustion and suppuration—any operative interference being, of course, out of the question. Had I seen the patient early before the glands of the groin became affected, I have no doubt excision of the epithelial growth would have been successful in saving her life.

Dr. ATTHILL had never found operative interference necessary for syphilitic enlargement of the labia. In one case he had removed the left labium and greater part of mons veneris for what he believed to be elephantiasis in an unmarried woman. For urethral caruncles extirpation by the galvanic cautery was the best treatment. The conical urethral speculum recently introduced was a great assistance.

Dr. KIDD said that the caruncles often extended the whole length of the urethra. He had found the application of nitric acid through the boxwood speculum successful.

Dr. CRANNY had cured a cystic tumour by injection of iodine.

Dr. M'CLINTOCK mentioned a case of enormous enlargement of nymphæ and clitoris distinctly traceable to syphilis. But in another similar case, which was cured by operation, syphilis was rendered most improbable by the history. For caruncles of the urethra nitric acid was preferable to nitrate of silver, since the pain produced, though very acute, was more transient.

Dr. FITZPATRICK believed that warts of the nymphæ were syphilitic as a rule. He mentioned a case in which there was nothing else pointing to syphilis, but the warts disappeared after a mercurial course, though they had resisted local treatment.

Dr. BOYD, in reply, said that he had never tried injection of iodine for cysts of the labia.

## *Obstetric Summary.*

### *The Influence on the Fœtus of Narcotics and other Medicines administered to the Mother.*

At the meeting of the New York Obstetrical Society, on February 6th, 1877, a paper was read by Dr. Mundé, suggested by a case reported by Dr. Mattison, in which  $1\frac{1}{3}$  grains of morphia were administered hypodermically within three hours, in a case of eclampsia during labour. Labour was completed two hours later, and the child was asphyxiated at birth, but was brought round by assiduous artificial respiration. During the next four hours it passed through nine convulsive seizures, in five of which the respirations diminished until they ceased, and life was only saved by artificial respiration.

Dr. Mundé relates a case of his own in which a lady during pregnancy used daily from twelve to sixteen grains of morphia hypodermically. A healthy child was born, but it was not considered prudent for the mother to nurse it. He then reviews the evidence on

record of the transmission of various substances from the maternal to the foetal blood, chiefly from the experiments of German observers. Gusserow\* injected tincture of iodine and a solution of ferrocyanide of potassium into the stomach of pregnant rabbits, guinea-pigs, and dogs, but was unable to find any traces of the drug in the liquor amnii of the foetus, even when it had been administered for five days in succession. He also gave iodide of potassium to pregnant women for periods varying from three days to five weeks before delivery. In six cases no iodide was found in the liquor amnii, or foetal urine; these being cases in which it had been given for less than a week, or in which its administration had been interrupted. In the remaining eight cases, traces of the drug were found. It thus appeared that even a very diffusible salt was transmitted to the foetus only very slowly and in small amounts.

Fehling† injected curare into the jugular vein of rabbits, so as to produce apnoea in the mother, but found the foetuses to be unaffected. On the other hand, Benicke‡ gave salicylic acid to women during labour, and found it in the urine immediately after birth, the shortest time after its administration being forty minutes. Zweifel,§ in five cases where chloroform had been inhaled during labour, found traces of the agent in the placenta, and in the urine of the new-born infant. Reitz|| injected cinnabar into the blood of a pregnant rabbit, and found the red particles of that chemical in the blood of the foetus particularly distinct in the capillaries of the pia mater; an experiment from which Schroeder concludes that transmigration of maternal blood-cells into the blood of the foetus is easily conceivable. Fehling, out of sixty-eight cases in which morphia had been administered hypodermically during labour, collected eight in which labour had been easy, or quickly terminated by forceps, in four of which the children were stillborn, and in four died unexpectedly within a few hours after birth. In all of these the brains were hyperæmic, and contained hæmorrhagic effusions, and the author concludes that the morphia had caused the asphyxia. A striking case, showing either that the child is less susceptible to narcotics before birth than after, or that they do not pass in any great quantity from the maternal to the foetal blood, is recorded in the *Annales de Gynécologie* for August, 1876. The new-born child of a woman accustomed to the daily use of opium in large quantities—an ounce or more a week—died in a few hours after taking the breast for the first time.

The discussion on Dr. Mundé's paper was protracted through several meetings. Dr. Fordyce Barker expressed a strong opinion that practically no injurious result to the foetus was to be feared from administration of narcotics to the mother. He had often kept

\* *Arch. f. Gyn.*, iii. 2, 1870.

† *Arch. f. Gyn.*, ix. 2.

‡ *Zeitschr. f. Geb. u. Tr.*, i. 3.

§ *Berl. Kl. Woch.*, May, 1876.

|| *Centralbl. f. d. Med. W.*, 41, 1868.

women under chloroform for from eight to twenty-six hours in cases of eclampsia, and the children had never manifested in the slightest degree any effect due to this agent. In eclampsia occurring before or after labour, he now considered the hypodermic administration of morphia to be the best treatment, and had never seen or heard of any evidence of the child having been affected. Dr. Gillette contributed a paper recording some important experiments made by himself. In six cases of perfectly normal labour he administered hypodermically ten minims of Magendie's solution of morphia. The effect on the mother was to produce a certain degree of narcotism, and considerable contraction of the pupils. All the children were born in a condition resembling narcotism. They were cyanosed and somnolent, respiration was feeble, and the pupils were contracted, the whole condition being unlike that usual in simple asphyxia of the new-born child. Five of the children recovered, life having been maintained for some time by artificial respiration. The sixth died in convulsions on the second day. At the autopsy intense cerebral congestion, especially at the base of the brain, was found. Dr. Gillette also made two experiments with atropia. In the first,  $\frac{1}{60}$  grain was given hypodermically, and the same dose repeated after an hour and a half, with the effect of widely dilating the pupils, and producing decided dryness of throat. Three hours after the second dose a living and vigorous child was delivered by forceps. Its pupils were markedly dilated, with a mere rim of iris, and refused to respond to light. In a second case the child was born half an hour after the injection of  $\frac{1}{48}$  grain of atropia, and no effects on its pupils were found.

Dr. Skene was also convinced that morphia given hypodermically was dangerous to the foetus, though it did not affect it when given by the mouth or rectum. He related a case in which a child was delivered stillborn, soon after the injection of this drug, when it had been certainly alive at the time when it was given. Dr. Thomas contended that the cases recorded in which the foetus had been affected by morphia administered hypodermically to the mother outweighed any amount of negative evidence. He had himself given five drops of Magendie's solution in this way in six cases of natural labour. Two of the children delivered were free from any opium influence, but four gave such distinct evidences of it that he was convinced of the possibility of the transmission of morphia thus administered to the foetus in utero.—*American Journal of Obstetrics*, April, 1877.

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*Gastrotomy Successfully Performed in a case of Rupture of the Uterus.*

Dr. Hart, of Nieuwer Amstel, in Holland, relates a case of spontaneous rupture of the uterus, in which the patient's life was saved by gastrotomy. She was thirty-seven years old, and was the subject of



pelvic contraction. The conjugate diameter was at most 7.9 cm. ( $3\frac{1}{8}$  inches), the promontory of the sacrum being easily reached by the finger. Of three previous labours, the first had been completed naturally after lasting for three days. In the second and third the foetus was extracted with difficulty by forceps. In the fourth pregnancy, labour proceeded until the os was fully dilated, and a segment of the head was engaged in the pelvis. Dr. Hart was about to terminate the labour by forceps, when suddenly, as an examination was being made, violent uterine action took place, and considerable hæmorrhage occurred from the vagina, after which all pains completely ceased. The foetus gradually receded, and after a few minutes was out of reach, slight sanguineous discharge continuing. The pulse rose to 100, but remained full. The moment at which rupture took place was about five hours from the time when the patient had been first seen, and the os found to be dilated to a diameter of 4.5 cm. ( $1\frac{3}{4}$  inches), the liquor amnii having escaped.

Professor Simon Thomas was called in in consultation, and discouraged any interference, but Dr. Hart nevertheless resolved to perform gastrotomy, and the patient accepted this operation. It was carried out about nine hours after the rupture, Dr. Hart having been obliged to defer it in order to perform craniotomy in another case. The pulse had then risen to 126, and there was severe abdominal pain. The foetus and placenta were found to be completely in the peritoneal cavity, the former lying in a dorso-anterior position. The uterus was firmly contracted. In the supra-vaginal portion of the cervix, at the anterior part, was a transverse rent 3 cm. in length. As no bleeding was taking place, and there was no sufficient space for sutures between the rent portion of the uterus and the bladder, no sutures were employed, but the pelvis was carefully sponged out. Convalescence was uninterrupted, the temperature never rose above  $38^{\circ}$  C., and the patient was able to go out of doors thirty-three days after the operation. The author contrasts the success of this case with a series of thirteen cases of rupture of the uterus collected by Professor Lehmann. In none of these was gastrotomy performed, but in most the foetus was extracted by version or forceps. All the patients died within a few days.—*Nederlandsch Tijdschrift voor Geneeskunde*, 1876, No. 42.

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*The Relation between Erysipelas and Puerperal Fever.*

Dr. Atthill records the serious effects which followed from the admission of a patient suffering from erysipelas into the Rotunda Hospital. During the winter of 1876-7 the mortality in the hospital had been very low. On the 15th of February a woman suffering from erysipelas in the head and face was sent to the hospital in labour, and was injudiciously admitted. She was placed by herself in a small ward, adjoining the large ward No. 2, which was also

empty, having that morning undergone the usual process of cleaning. Shortly after admission she was delivered, and next morning, although to all appearance doing well, she was sent by Dr. Atthill's direction to the Hardwicke Hospital, so great did he consider the danger from her presence to the other puerperal patients. All the bedding was then removed to be washed and stoved, and the ward itself was fumigated and then left unoccupied for some weeks.

On the 16th and 17th, after the removal of this patient, six patients were admitted into No. 2 ward, separated from that in which the case of erysipelas had been by a small ward, occupied by one of the patients, the three wards opening directly off each other. Five of these patients suffered from severe symptoms of puerperal peritonitis, and two were alarmingly ill, but all eventually recovered. The only one who altogether escaped was a case of abortion in the third month of pregnancy. On the afternoon of the day on which the erysipelas case was delivered, four patients were admitted into No. 1 ward, which is on the opposite side of the corridor to the ward occupied by her, and further separated from it by the width of the staircase. Two of these merely complained a little, a third had symptoms similar, though in a less marked degree, to those exhibited by the patients in No. 2 ward; the fourth, a very delicate woman, who had been ailing before admission, was attacked in a similar manner and died. Thus of ten patients admitted into a hospital, of which the sanitary conditions had, previous to the admission of a case of erysipelas, been most excellent, nine were attacked with illness more or less severe, and one died, the only one who escaped being a case of abortion.—*Medical Press and Circular*, April 25, 1877.

### *Gynæcic Summary.*

#### *Successful Removal of a large Fibroid Uterus with Both Ovaries.*

Mr. Knowsley Thornton relates a case of recovery after the removal by gastrotomy of a large fibroid uterus with outgrowths, and both ovaries. The patient was thirty-eight years old, married for seventeen years, but had never been pregnant. Menses had been regular and scanty, lasting two or three days, accompanied by a good deal of pain. Two and a half years previously she noticed increase of size, and found a hard lump low down in the left side of her abdomen. This lump grew steadily but slowly larger, while the pain both at and between the monthly periods became so severe that she was unable to attend to her domestic duties, or to walk about without assistance. During the last few years she had three times had small intra-uterine polypi removed.

When the patient came under observation, there was a hard, movable mass in the left iliac region, extending slightly across the linea alba; pressing and moving it caused her considerable pain. In

the right side was another similar, but much smaller and more tender, lump, and the two appeared to have some deep pelvic connexion. On vaginal examination, the cervix was found hard and movable, the os pointing rather to the right, and having a small pedunculated polypus hanging from it. The tumour on the left side proved to be the body of the uterus, much enlarged and displaced, and the sound passed nearly five inches into it. The right side and back part of the pelvis was occupied by a hard, elastic, globular mass, continuous with that felt on the right side of the abdomen. It appeared to arise from the enlarged uterus on its right side, just above the vaginal portion of the cervix. It was only slightly mobile, but sufficiently so to render it probable that it was only wedged and not adherent.

For the next three months she became worse, and the pelvic mass appeared to be increasing. After consultation with Mr. Spencer Wells, Dr. Savage, and Dr. Bantock, it was decided to remove the tumour, if possible, as being the only possible cure, although not by any means a hopeful proceeding. The operation was performed at the Samaritan Hospital on January 10, 1877. The intestines lying immediately under the peritoneum rendered the opening of the latter difficult, especially as the afternoon was dark and foggy. When the section of the peritoneum was completed, a drop of brown fluid on the surface of a coil of intestine showed that this had been slightly wounded by the point of the knife. It was closed by a continuous suture of fine silk. The pelvic portion of the tumour could not be dislodged until the operator had pressed the mass on the left side through the incision, and used it as a lever by pressing it forcibly over the left iliac crest. A strong double string ligature was then passed through the left half of the mass, just at its junction with the pelvic portion, and each string being tied tightly, the left half was cut away. Room was thus gained to transfix the broad ligament on each side with a double ligature of strong silk, each transfixion being so made that the silks when tied included the base of an ovary with its tube. The ovaries were then cut away. The broad ligament on the left side retracted, and free hæmorrhage occurred, requiring the application of a temporary clamp, and the subsequent ligature of one or two large vessels. The cervix was then transfixed with strong silk, each half firmly tied, and the mass cut away with the knife. A little oozing having followed the trimming of the stump with scissors, one of the ligatures was passed round the whole stump and securely tied. All the ligatures were cut short, and the abdomen closed, the operation having occupied rather more than an hour and a half.

The ice-water cap was used on two occasions in the after-treatment, the temperature having risen to about 101°. On the ninth day some red offensive serum came away per vaginam, and this continued more or less till the eighteenth day. The discharge then ceased, there was pain in the right iliac region, and the pulse rose to 124. On examination by speculum, a small slough was found filling

up the external os. This was pulled away, and a quantity of fetid pus followed its withdrawal. Convalescence then continued favourable; the patient was on the couch on the twenty-seventh day, and went out on February 16th.

The author believes that this is the first case in which the uterus and ovaries have been successfully removed, all the pedicles being ligatured with silk, and left free in the peritoneum. He prefers this to the extra-peritoneal method, thinking that there is less danger of septicæmia, or of hæmorrhage when the clamp or wire separates, a danger which experience shows to be by no means a small one.—*Medical Times and Gazette.*

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#### *A New Operation for Prolapse of the Uterus.*

In a paper read at the meeting of the Société de Chirurgie on February 14th, 1877, M. le Fort describes a new operation invented by himself for the cure of prolapse of the uterus and vagina. Against the operation of anterior colporrhaphy, as practised by Marion Sims or Emmet, there are the objections that it is long and difficult of execution, being performed through the speculum. Complete, or almost complete, closure of the vulva is put out of the question, because it forms a bar to coitus; and the operation performed by Simon, by which the vulvar orifice as well as the posterior vaginal wall is narrowed, has been shown by experience to be not without certain dangers. The author observes that the first stage in prolapse is almost always a cystocele, and that the anterior and posterior vaginal walls are gradually rolled out and separated from each other, thus allowing the parts above to descend. The proceeding which he recommends is therefore to vivify a longitudinal strip on the anterior and posterior vaginal walls, and to unite these by sutures. The strips are vivified while the parts are external; the upper suture is tied first, and the uterus and vagina are gradually restored to position as the threads are successively tightened. A longitudinal septum is thus produced in the vagina, but the author contends that this is free from objection, since experience has shown that in cases of double vagina where such a septum naturally exists, there is no impediment to coitus or even to parturition.

A case is related in which the operation was performed upon a woman forty-eight years old, who had suffered from complete prolapse for six months. The vagina was entirely inverted, the bladder forming part of the tumour, and the sound passed 7 ctm. In passing the sutures, the ends of the threads were left long, and by this means they were removed after the loops had cut through the tissues enclosed. Union was complete, and the result was entirely satisfactory as to the cure of the prolapse, but a second operation was performed six weeks later for the restoration of the damaged perineum.—*Annales de Gynécologie*, April, 1877.



*Epithelioma of the Cervix cured by the Injection of Chloride of Zinc.*

Dr. Guichard relates a case of epithelioma of the cervix uteri in which, by means of a syringe, injections were made into the cervix of a solution of chloride of zinc of the strength of one in five. The patient had been wasting for seven months, and had suffered from metrorrhagia for four. The anterior lip of the cervix was increased in volume but free from disease. The posterior lip was the seat of a cauliflower excrescence, the base of which was indurated. The uterus itself was movable, and did not appear enlarged.

The cervix was exposed by Sims' speculum, and injections made at several points on each occasion. The point of the syringe was inserted to a depth varying from 5 mm. to 1 cm., and about five drops of fluid were injected at each spot. The duration of treatment was one month. Injections were made at five sittings, at intervals of from five to six days. After the morbid growth had sloughed away, and there was danger of injuring the peritoneum by introducing the syringe any longer, the caustic was simply applied to the raw surface on several occasions. The inflammation produced was very limited, and there was no febrile reaction, a result which the author attributes to the property which the chloride of zinc has of coagulating instantly blood and lymph, so that no caustic liquid could be conveyed by the lymphatics to the peritoneum. At the end of the treatment the posterior lip of the cervix was replaced by a cicatrix which made scarcely any prominence. After the lapse of a year there was no sign of recurrence, and the patient was in good health.—*Annales de Gynécologie*, February and March, 1877.

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*The Mortality after Operations for Vesico-Vaginal Fistulæ.*

M. Vernueil gives the result of his experience as to the complications and grave accidents which are liable to happen after the operation for vesico-vaginal fistulæ, and contends that the danger to life from this operation, or from the affection itself, when left without operation, has not been estimated sufficiently highly. Out of about eighty operations he has lost five patients; two others had a very narrow escape, one from erysipelas, the other from embolism; and in several other instances he has seen serious pelvic peritonitis result. He records the following cases:—

1. A young woman having a fistula 7 or 8 mm. in diameter, at the base of an infundibulum. The uterine orifice was out of reach in a depression behind cicatrices, and probably much narrowed. Three days after the operation symptoms of menstrual retention supervened, followed by some external flow. Peritonitis came on, and was fatal in eight days.

2. A large fistula, at least 4 cm. in diameter, the edges fixed by

cicatricial tissue. Several small arteries were divided in vivifying the edges, serious hæmorrhage took place, and the operation had to be left incomplete. Peritonitis followed, and was fatal three days after the operation.

3. A woman, aged thirty-two, had previously undergone two operations for fistula without complete success. The operation on a small remaining fistula presented no great difficulty, but the edges were pared deeply on account of the presence of irregular cicatricial tissue. Peritonitis followed, and death two days after the operation. The edges of the wound were found healthy, and the sutures in place.

4. A woman, aged thirty-four, who had a small fistula 15 mm. in diameter, at the base of an infundibulum near the cervix, and difficult of access. Intense vulvo-vaginitis had been produced by the contact of the urine. Three successive operations were followed by symptoms of pelvic peritonitis, and union failed in whole or in part. A fourth operation on a minute remaining orifice was followed by peritonitis on the third day, and death on the eighth. Numerous old adhesions were found and the pelvis was filled with pus.

5. A woman, thirty-eight years old, with a large fistula, 3 by 2 cm., divided into two by a bridge of tissue. On the ninth day the union, which at first appeared complete, gave way. On the eighteenth day, after the patient had been walking about, apparently in perfect health, acute peritonitis came on with symptoms resembling intestinal obstruction, and death followed in four days. General peritonitis was found at the autopsy, but no obstruction.

6. A large vesico-vaginal fistula,  $2\frac{1}{2}$  cm. in transverse diameter. Death occurred with symptoms of uræmia, no operation having been performed. At the autopsy thrombosis was found in the pelvic veins. The right ureter was dilated, and there was pyelo-nephritis of the corresponding kidney.

7. A woman, thirty-five years old, having a large fistula. The operation was long, numerous sutures having to be applied. The next day the inguinal glands were swollen; on the following there was lymphangitis starting from the vulva, and following the genito-crural fold. Erysipelas then extended to the thigh, abdomen, and loins, and for several days the patient was in great danger. The sutures were left in till the sixteenth day, and complete union had then taken place.

8. A woman, aged thirty-nine, with a fistula opening into the cervix uteri, the anterior lip of which was destroyed. After preparatory cauterisation the operation was performed for obliteration of the vagina, throwing the orifice of the uterus into the bladder. Four days after menstruation came on prematurely, and the union failed in consequence. The operation was repeated six weeks later. On the ninth day the patient was suddenly attacked with pains in the right chest, and alarming asphyxia. Ten days later phlegmasia dolens of the left leg appeared, but the patient recovered, and complete union had taken place.

9. A large vesico-vaginal fistula situated near the cervix. While

wearing a self-retaining catheter the patient suffered from three attacks of erysipelas of the vulva. An examination was made with Bozeman's speculum preparatory to the operation, all inflammation of the parts having disappeared. Next day peritonitis appeared, and proved fatal in a few days. At the autopsy pus was found in the pelvis, and also in the Fallopian tubes and the uterus; but the walls of the uterus and the bladder were healthy. The starting-point of the inflammation was probably some abrasion produced by the speculum, and irritated by the contact of urine.

10. A young woman with a small fistula. After an operation a minute orifice remained unclosed. An examination by speculum was made, lasting twenty minutes, during which the patient felt very cold. Half an hour after a rigor occurred, followed by fever, abdominal pain, and vomiting. The next day herpes labialis appeared, and the symptoms soon subsided. The fistula was afterwards cured by cauterization.

11. A healthy woman, aged twenty-nine, had a small fistula lying behind an annular contraction of the vagina, which barely admitted the forefinger. The contraction was dilated at one sitting by forceps, followed by the introduction of a small bivalve speculum. At the end of three or four days intense vulvo-vaginitis appeared, and large ulcers were formed near the fourchette, having an appearance resembling gangrenous diphtheritis. The patient recovered under the use of carbolic injections, and the fistula was successfully closed by operation five weeks later. On the fourth day an ovum of two months' development was expelled, pregnancy not having been suspected, but union was not interfered with.—*Annales de Gynécologie*, January, 1877.

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*Chronic Inversion of the Uterus of Thirteen Years' Standing  
Cured by Pregnancy.*

Dr. Le Dibarder relates a case of chronic partial inversion of the uterus in which the patient became pregnant, and the inversion was thereby cured. When the patient came under observation she was forty-two years old. By a former marriage she had had several children. She had been married a second time but had no more children, although earnestly desiring them. The last confinement took place thirteen years previously, and was accompanied by severe hæmorrhage. Ever since she had suffered from profuse and gradually increasing menorrhagia, and was unable to lie in any position except on her back. On examination the vagina was found to be occupied by a pyriform tumour which projected through the dilated cervix, and bled at the slightest touch. The finger could be readily passed between the tumour and the cervix to a depth of two centimetres. On the 23rd of August, 1875, prolonged and repeated attempts were made at immediate reduction, a considerable degree of force being

used. The author several times succeeded in carrying up the fundus to the level of the cervix, but no further. The attempt was then abandoned, with the intention of shortly renewing it, and injections of perchloride of iron were prescribed. The patient did not reappear until October 20th. In the meantime the menses had recurred in a natural manner in the course of September, and there had been no other hæmorrhage. The uterus was found to be completely restored to its place. The author concluded that nothing but the occurrence of pregnancy could have completed the restoration, and that this had probably taken place. Such proved to be the case, and on June 19th, 1876, normal delivery took place, without any excessive hæmorrhage, and was not followed by any recurrence of inversion. The author remarks that the mechanism of this reduction, produced by the growing ovum, illustrates the efficacy of constant and gradual pressure acting at a *single point*, on one side of the inverted fundus, and tends to confirm the correctness of the principle laid down by Marion Sims for the performance of artificial reduction—namely, to make the pressure near the orifice of one Fallopian tube as soon as the inverted body has been carried up beyond the level of the os.—*Annales de Gynécologie*, January, 1877.

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#### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

“Cyclopædia of the Practice of Medicine. Dr. H. von Ziemssen. Vol. XII. Diseases of the Brain and its Membranes.” Sampson, Low, & Co. Pp. 902.

“Policlinique Obstétricale.” Par le Dr. Verrier. Paris. 1877.

“Les Lymphatiques Utérins et leur Rôle dans la Pathologie Utérine.” Par le Dr. Just Lucas-Championnière. Paris. Delahaye & Co.

“De la Lymphadénite Péri-Utérine.” Par le Dr. Georges-Auger. Paris. Delahaye & Co.

“Lymphatique Utérins et Parallèle entre la Lymphanite et la Phlébite Utérine.” Par le Dr. Jacques Fioupe. Paris. Baillière et Fils.

Communications received from Dr. Angus Macdonald, Dr. Boze-man, Dr. Percy Boulton, Dr. Godson, Dr. Wigglesworth, Dr. Cuthill, Dr. Finlay, Dr. Oliver, Dr. Roper. Dr. Edis, and Dr. John Williams.

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Original Communications.

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ON THE BEARINGS OF CHRONIC DISEASE OF  
THE HEART UPON PREGNANCY AND  
PARTURITION.

By ANGUS MACDONALD, M.D., F.R.C.P.E., F.R.S.E.

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School, and Physician-Accoucheur New Town Dispensary, Edinburgh.

(Read before the Obstetrical Society of Edinburgh.)

(Continued from p. 169.)

CASE III.—*Mitral Stenosis.—Hemiplegia, with a certain degree of Aphasia on 10th January, 1877 (Embolic?).—Partial Recovery.—Labour premature in consequence of Accidental Hæmorrhage on 21st February, 1877, being about three weeks too early.—Urgent symptoms during Delivery, which was ended by Forceps.—Recovery.*

(Reported by MR. FRANCIS H. RUSSELL, my Dispensary pupil.)

MRS. CONWAY, aged thirty-five, residing at 27, W. Norton Place, states that she always enjoyed good health, never having had rheumatic fever, nor any other serious illness that she can remember. Sometimes, when doing her work, she has suddenly become stupid, and has had to sit down and rest for half an hour or so, and during this time would answer no questions put to her. This has occurred three

or four times during the last year. She had an attack of childbed fever after the birth of her sixth child. She has had eleven children. The first is alive ; the second was an abortion at the sixth month, after a fall in the street ; the third is living ; the fourth was premature, and born dead ; the fifth was also born dead, but at the full time ; the sixth is living ; the seventh stillborn at the full time ; the eighth at the fourth month ; the ninth was born at the full time, and is still living ; the tenth was at the fifth month ; and the eleventh at the full time, but dead.

On the 12th January, 1877, she had a hemiplegic attack. She was unconscious for about twenty-four hours, and when she came to herself again, she found she had paralysis of the right side. In a week she had recovered the use of her limbs, but her face was still drawn to the left, and her tongue protruded to the right. Her intellect did not recover so quickly, and she is still somewhat aphasic.

*Condition of Feb. 20th, 1877.*—Fairly developed. Skin, &c., natural. No pulsation can be detected in the veins of the neck. Pulse 84, regular and full. She has never suffered from palpitation nor faintness. The heart's apex impulse can be faintly seen below the nipple, and on palpation it can be felt between the fifth and sixth ribs, two inches to the left of the sternum. Very slight pulsation can also be detected between the third and fourth ribs, an inch and a half to the left of the sternum, accompanied by a very faint thrill. Perpendicular dulness in a line one inch to the left of the sternum, extends from the second rib to the upper border of the seventh, where it becomes tympanitic. At the level of the fourth rib transverse dulness extends from the centre of the sternum to  $2\frac{1}{4}$  inches to the left of it. In the mitral area are audible—1st. A well-marked pure pre-systolic murmur ; 2nd. An accentuated first sound ; and 3rd. A slightly impure second sound, also accentuated. In the aortic and pulmonary areas a reduplicated second sound can sometimes be faintly heard ; the pulmonary second sound is accentuated. Everything else normal. The sphygmograph shows unmistakably a wave, presystolic in character, but indicating great tension of the arterial system.

Liver dulness is not increased. The patient has never had any general symptoms of obstruction to the circulation. Urine natural, and contains no albumen. Intelligence still markedly impaired. All other organs appear normal.

*Progress of Labour.*—On the afternoon of the 21st drops of blood were noticed on the floor. The patient was at once put to bed, and soon after had a slight attack of hæmorrhage. She had been vomiting severely all day, and by night she had become pale and exhausted-looking. At 7.15 P.M. her pulse was 108, regular, and of moderate strength. Os dilated to about the size of a penny piece, and filled up with a firm clot of blood. Some sanguineous discharge present. Pains return at intervals of about twenty minutes. Uterus is continuously tense. The head presents.

8.30.—Pulse 116; decidedly feebler. Os dilated to the size of a half-crown piece. Patient had another attack of vomiting; still some bleeding.

9.30.—Pulse 100; extremely weak. Os about the same size. Hæmorrhage quite stopped. Breathing not at all affected.

10.15.—Pains now occur every five minutes, but are weak. Pulse so feeble that a glass of whisky and water was given. Pulse immediately rose to 120, but fell in a few minutes to 94—much stronger—can occasionally be detected slightly irregular. Pulsation and thrill in auricular area greatly increased, where second sound is markedly accented. No cough. Os dilating very slowly; membranes very tense and strong.

10.45.—Pulse 120; irregular and weak. A spoonful of whisky reduced it to 72, and at the same time made it more powerful. Cervix about half dilated. Membranes were ruptured by the finger, and the waters evacuated.

11.30.—Pains weak, but uterus constantly tense. Pulse 100. Head ascertained to be in the right occipito-posterior position, and well down in the pelvis.

12.30.—Pulse 108. The labour is now almost at a standstill. The occiput is more and more approaching the sacrum, and the anterior fontanelle is almost central. Accordingly it was deemed proper to effect delivery by forceps.

The face continued forwards. The patient was much relieved immediately after delivery. The child was born at one o'clock A.M., and found to have been dead for some time. It was thought to be about three weeks before the full time. The placenta was found to be quite detached, and was expelled immediately after the child. It had the appearance of being channelled out by a blood-clot, hæmorrhage having apparently taken place into its centre, causing almost complete separation of it, and leading to considerable hæmorrhage between the membranes.

The auricular pulsation had nearly abated at 1.15.

2 P.M.—Uterus not firmly contracted ; slight hæmorrhage. Four grains of ergotin were injected. Pulse 124.

2.30.—Hæmorrhage ceased. Uterus fairly contracted. Pulse 110.

3 o'clock.—Pulse fallen to 90, moderately strong and regular. Patient feels comfortable.

From this time onward the patient made a steady though very slow recovery, and is now doing pretty well.

This patient was seen and examined by me before her confinement, and also watched with great concern during it. From what I could ascertain, her eleventh confinement had been complicated with placenta prævia. At any rate there had been a very large amount of hæmorrhage before the birth of the child, and the patient's husband states that his wife never properly recovered from her last confinement. It is extremely interesting to note how, time after time, those parturient patients affected with chronic disease of the heart express themselves as unaware of ever having had rheumatic fever.

In the present instance, I am inclined to believe that the cardiac disease must have begun with endocarditis, arising in connexion with her immediately preceding confinement. There is no history of cardiac disturbance of any kind in her case to warrant us in believing that it had been congenital, or had begun in early life. Indeed, it is, it seems to me, extremely improbable that such a lesion beginning in early life should have remained mute for so many years, and



through so many pregnancies; and we have in relation with her twelfth pregnancy exactly the kind of condition that is wont to give rise to endocarditis. The stenosis in her case was pure, and still moderate in amount. The view of its being recent is rather confirmed by the occurrence of embolism, which is more likely to follow from a recent case if the embolism is due to the escape of a valvular vegetation. But of course if it is due to the formation of auricular clots, it is more likely to occur in old cases. There was only slight increase of cardiac dulness in the perpendicular direction, with unmistakable increase in the transverse direction, facts which indicate the commenced disruption of the compensatory arrangements that had been formed before the beginning of the pregnancy. The advance of the dulness to mid-sternum in a line with the nipple indicates considerable dilatation of the right auricle. Still the backward congestion was not as yet sufficiently great to cause any marked pulmonary symptoms, most probably because the right ventricle was still working powerfully, and was well nourished.

To the transmission of tension from the mitral valve backwards on the venous system, however, I am disposed to ascribe this accidental hæmorrhage, as it is called by obstetricians—that is, the rupture of the placental vessels, which led to the premature delivery by effecting the curiously excavated separation of that organ. This hæmorrhage, though slight in actual amount, introduced a complicating force which renders the case, however carefully watched, of less value in aiding us to determine the mutual bearings of heart disease and of parturition upon one another than it otherwise would have been.

With a view to determine, if possible, the degree of the vascular tension I had sphygmographic tracings taken of this patient's pulse the day before the labour came on, and during delivery, both during and in the interval between a pain. The curves, as may be seen at a glance, had the characteristic outline of this lesion at all times. But before labour the perpendicular range of the instrument was extensive, and the

pulse wave full, and indicating considerable tension of the systemic circulation. But during the labour the tension of the arterial system had sunk down very markedly, as is seen on inspecting the second tracing. The pain did slightly increase the force of the pulse, as is shown by an inspection of the third tracing, but only to a trifling extent. There had therefore taken place a manifest change in arterial tension between the previous day and the establishment of the labour. Whether to ascribe this alteration to the disturbing effect of the labour upon the circulation, or to the hæmorrhage which initiated the latter process, gives me considerable difficulty, though on the whole the most obvious cause seems to have been the hæmorrhage. But that the labour pains acted in a very peculiarly disturbing manner upon the action of the heart is evident from the extraordinary changes in frequency that were seen to occur. It was not so much the irregularity of one pulsation compared with another, for there was not much of that, as it was the extremely variable nature of the rate of pulsation for considerable periods. Thus the pulse would jump up to 120 at one time, and continue that rate for a time with tolerable regularity; and again it would come suddenly down to 94, and continue so for a considerable period, these rapid alternations bearing no hard-and-fast ratio to the presence or absence of labour pains.

There is reason to believe, on general grounds, that during a pain arterial tension is increased. This, undoubtedly, must be the case during the second stage. But it does not appear to occur to a great degree during the first stage, to judge from tracings which, as stated at p. 86, we have made. During the second stage there is so much muscular tremor and restlessness as to render sphygmographic observations utterly worthless.

On the whole, I am inclined to believe, though not as yet fully satisfied on the subject, that the sphygmographic tracings in themselves indicate a pulse of higher than ordinary tension during the latter months of pregnancy and during childbed. In the latter condition the tracing is particularly high in range, and frequently slopes slowly and gradually

down to the level, as though the artery moving the lever were specially well filled and only slowly lost its tension. The variations in time in this case are very remarkable. This lowness of arterial tension and the coincident tendency to post-partum hæmorrhage seem also worthy of remark. We never see hæmorrhage post-partum when the pulse is slow—*i.e.*, strong ; or rather, when arterial tension is high. But I shall return in the last part of the paper to the question of sphygmographic tracings.

It might be said that this patient, having had a series of abortions or dead children, was most probably constitutionally syphilitic, and that this led to the placental separation and premature delivery. I have studied with some care the subject of syphilitic placenta, and can vouch for its not being present in this case. Moreover, with the most careful inquiries, we could elicit no fact that would warrant us in believing that the patient was constitutionally syphilitic.

Was the paralysis that occurred on the 7th of January due to embolism or to apoplexy? I think the presumption is that it was embolic. The amount and intensity of it was not so great as we should have expected in apoplexy. Moreover, the patient's vessels, so far as we could judge of them by inspection, were quite normal, with the sole exception of the cardiac lesion. It is further well known that, supposing no vegetation had existed on the mitral valves, the blood stasis coming behind such a constricted mitral is apt to lead to the formation of clots in the auricular appendage, one of which may have got loose and settled in some part of the left middle cerebral artery or its branches. But there is nothing improbable in the idea that a small vegetation had dropped off from the edge of the diseased mitral valves, and have got impacted in that part of the vascular system.

I think that it can fairly be regarded as probable from this case, that so soon as a mitral stenosis is sufficiently great to lead to dilatation of the right heart, it is liable so to be aggravated by the pregnancy as to transfer such an amount of pressure from the arterial system to the veins, as may lead to

rupture of the placental cells, and may terminate pregnancy in that way prematurely. On one occasion I was asked by Dr. —now Professor—Stephenson, of Aberdeen, to see a case with him, which bears out the view that undue vascular tension may lead to placental apoplexy, and hence to premature delivery. My note of this case runs as follows :—Mrs. C., aged twenty-seven, was in March, 1875, about the seventh month of pregnancy. On Saturday, 27th March, 1875, while calling at Dr. Stephenson's house, whom she had engaged to attend her in her approaching confinement, she felt an acute abdominal pain. She went home, and was next day delivered prematurely. There was considerable hæmorrhage before the os opened, and great prostration. These symptoms looking serious, Dr. Stephenson asked me to see her with him. She quickly recovered, however, from her collapsed state. On examining into the cause of the miscarriage, and finding intense albuminuria, we thought the consequently heightened blood pressure might have led to separation of the placenta. On examining that structure, we found part of it occupied by a hard and firm clot, which had evidently been formed the day before. The urine was almost completely suppressed. There had also been vomiting during the day. We gave some chloral and ice, and orders to watch in case convulsions came on. One occurred that night, but not afterwards. This patient did well.

Then, when we have the mitral lesion complicated with even a comparatively small amount of hæmorrhage, we may expect a very alarming amount of feebleness and irregularity of the pulse, which, however, will in all probability disappear on the termination of the labour. Such cases manifestly require the free use of stimulants, notwithstanding the existence of hæmorrhage, and warrant us in hastening delivery by artificial means. Had I had digitalis by me during the time I watched this case, I certainly should have administered it freely. But the labour came on at night, and we were a considerable distance from a chemist's shop, so that we were compelled to depend upon a general stimulant without the advantage of the special cardiac one.



CASE IV.—*Mitral Stenosis. — Labour at Full Term. — Threatening symptoms of weakness and irregularity of the Pulse during Second Stage. — Delivery by Forceps. — Recovery.*

(Reported by Dr. JOHN PLAYFAIR, whose patient Mrs. T. was.)

Mrs. T., aged twenty-three, primipara, a slightly-built woman, under the average size, but fairly well developed, consulted me in the beginning of October, 1876, for a pain in her left side, with occasional palpitation and breathlessness on exertion. On listening over the heart's apex I heard a distinct presystolic murmur. The patient told me she expected to be confined in the second week of February, and I agreed to attend her. A belladonna plaster was ordered, and a mixture containing digitalis. I heard nothing more from her till I was called to attend her in labour on the 7th Feb. 1877. On arriving at the house at 12 noon, I was told the pains had commenced at 3 A.M., and that the waters had come away at 10 A.M. Patient also informed me that the pain in her side had not troubled her much after she had seen me in October, and that her health had been very good during her pregnancy, though always liable on rapid movement or any excitement to palpitation and slight dyspnœa. On vaginal examination, the os was found to be fully dilated, the membranes ruptured, and the vertex presenting. The head was already well down in the pelvis, with the occiput almost opposite the symphysis pubis, but inclined slightly to the left. Pulse was 104, soft but regular, and of fair strength. The pains were occurring about every four minutes, but were not strong, and of short duration. Patient showed no sign of exhaustion, and she had not as yet exhibited any tendency to faintness. During a down-bearing pain I now noticed that the pulse became imperceptible, and the patient somewhat cyanotic. Before, however, the sense of pulsation in the vessel was lost, the beats were observed to quicken very considerably. As by 2 P.M. the case had made no progress whatever, I determined to apply the forceps. The patient was first put fully under the influence of chloroform, and now I observed that the pulse had

become decidedly intermittent and irregular, and had risen to 120, and that the cyanosis was very marked. At one time the irregularity of the pulse was of such a character that a weak beat could be distinctly felt to follow a strong, and from the time the anæsthetic was first administered to the termination of the labour, the rhythm of the pulse varied much, but never became completely regular. The forceps were easily applied, but considerable force was necessary to bring the head through the bony outlet. The forceps were then removed, when delivery was speedily completed by the natural efforts. The child was born at 2.30. It was a strong healthy-looking girl, and cried lustily immediately after its birth. The patient very soon came out of the chloroform. The uterus contracted well, and the placenta came away easily without any bleeding. A few minutes after the birth the pulse was 104, irregular; and when I left the house at 3.30 it was 96, but its character was not noted. At 9.30 P.M. the pulse was 96, slightly irregular, but not intermittent. Patient says she feels very comfortable, and inclined to sleep. Has had no sense of faintness. Had passed water.

Dr. Angus Macdonald saw the patient with me next day, the 8th February, when the condition of the heart was made out to be as follows:—On palpation a diffused apex beat is felt, accompanied with the peculiar presystolic thrill, the pulsation being best felt, however, between the fifth and sixth ribs, about a quarter of an inch to the inner side of the vertical nipple line. On inspection there is visible pulsation in an area about an inch and a half square, extending as high up as the transverse nipple line (the nipple being on the fourth rib) and as far to the right as the left edge of the sternum. On auscultation there is a distinct presystolic murmur heard over the pulsating area, the murmur ending abruptly with the first sound. At the base in both the pulmonary and aortic areas the second sound is markedly reduplicated, while in the pulmonary area it is also intensified. The presystolic murmur is heard, though faintly, in the pulmonary area. On percussion the transverse dulness is not markedly increased, while the vertical dulness beginning

at the third intercostal space is lost below in the dulness of the left lobe of the liver. There was no history of rheumatism. The patient has a slight cough, but there is no pulmonary disease detectable. To-day her pulse is 88, regular. She is doing very well.

22nd February.—Patient has progressed very favourably since last report, and is now able to move about the house, though still rather feeble.

This is a most interesting example of a tolerably well compensated mitral lesion, which from its commencement would appear to have remained mute till the patient became far advanced in her first pregnancy. Had she not become pregnant, the fair presumption is that she would not have been aware of her heart disease for many years to come. Her sphygmographic tracings obtained, one a fortnight, another two and a half months after delivery, indicate considerable loss of arterial tension from the mitral obstruction. Still this patient could get on quite comfortably, the heart being equal to the ordinary requirements of a tolerably active life; but during the latter periods of the pregnancy the usual initial disturbances arising from such cardiac lesion—viz., palpitation and breathlessness, made themselves prominent, still, however, not to such amount as to excite much concern in the patient's mind, or in Dr. Playfair's. Even during the first stage of labour the patient suffered little, if any, inconvenience from her heart disease. Nevertheless, when the second stage was reached, and proved to be difficult, the cardiac disturbance in the shape of irregularity of the pulse, tending to syncope, became positively alarming, and led to the necessity of shortening the second stage. With the delivery it is to be noticed that the irregularity of the pulse abated, but did not entirely disappear for some time. Now this we observe in all such cases, except the main lesion is aortic insufficiency. In that case, after delivery the threatening symptoms subside rather suddenly on the successful conclusion of the second stage of labour.

It is evident from this case, as well as from several others, that during the first stage of labour there is not such an

amount of extra pressure in the arterial system as makes any great demand upon the action of the heart. But so soon as the irritation due to the pressure of the uterine contraction has the down-bearing effort superadded to it, then symptoms of an alarming nature are apt to arise.

It is easy to understand that a very little more irregularity and feebleness of pulse might have ended in fatal syncope. Indeed it would appear that such would most probably have happened in this case but for the timely interference of Dr. Playfair.

How does it arise that patients who suffer from mitral disease are so apt to have an irregular, weak pulse during the down-bearing efforts? That such is ordinarily the case we may, I think, accept as a fact. At any rate, the present case and the last one abundantly prove its occasional occurrence, and in the sequel we shall find it a tolerably constant symptom. Let us attempt to analyse the physiological conditions connected with a down-bearing effort with the view, if possible, of presenting a rational explanation of this occurrence. I am well aware of the difficulties attaching to all methods of explaining cardiac irregularity, and merely throw out this as a probable explanation in the special circumstances. 1st. We have the lungs tensely filled with air, and the glottis shut. 2nd. The diaphragm is depressed as far as possible, and its muscular area contracted as tensely as it can be. 3rd. The uterus is contracted so that the venous blood is squeezed out of it. 4th. The abdominal walls are powerfully contracted.

In consequence of the conjunction of the three latter forces the blood existing in the venous system throughout the abdomen must be pushed forwards with considerable force into the right auricle, and thence into the right ventricle, so as to produce over-distension of these cavities. But the existence of a mitral obstruction for any length of time necessarily produces a dilated and weakened right heart, as well as a dilated, though not necessarily weakened, left auricle. We are therefore entitled to hold that in the present case such a condition of affairs existed to a certain amount. The lungs being distended with air under con-



siderably increased tension during the down-bearing effort would present further difficulty to the action of the right ventricle. The mitral stenosis maintaining a condition of continuous engorgement of the dilated left auricle, in its turn aggravates matters. Also, if it be true that during pregnancy the left ventricle increases in thickness, whilst the other three chambers receive no addition to their muscular tissue, pregnancy would only make these chambers more liable to yield to the distending forces I have mentioned, and at the same time leave an hypertrophied left ventricle to act with its unusually great force in the same direction so far as the stenosis was accompanied by insufficiency—that is to say, the tendency of the powerful ventricle would be to still further aggravate the evil effects of the stenosis upon the left auricle. Add to all this the fact, that we have within a given section of the vascular system an unusually large supply of blood in consequence of the increased bulk of that fluid in circulation during the latter months of pregnancy, and we have during the down-bearing pains, it appears to me, sufficient conditions to account for the onset of very weak and irregular heart's action, with, on the part of the lungs, dyspnœa and cyanosis. In short, three chambers of the heart—viz., the right and left auricle and the right ventricle—are paralysed, not as Fritsch would have it by a sudden gush of blood entering them when in a state of emptiness, but by over-distension. The aortic pressure sinks, not from any removal of the placental circulation, for we assume that this as yet has not taken place, but from want of blood supply from the left auricle. The blood not getting through the lungs is not aërated, cyanosis results, and general depression of cerebral action occurs. In many cases this latter condition is sufficient to occasion unconsciousness, the patient being in a condition approximating to chloroform narcosis. It is easy to see that though on a superficial examination this condition would appear to exclude the administration of chloroform, yet as this drug diminishes very markedly the down-bearing effort, on a closer examination of all the circumstances, as I have put them, the advantage in stopping the *fons et origo mali* will be greater

than any possible disadvantage that might be expected from it. This latter belief is at any rate borne out by my experience of its use.

CASE V.—*Mitral Stenosis.—Miscarriage about Fifth Month, and Death thirty-six hours afterwards.*

(Communicated to me by Dr. JOHN LINTON.)

I was first called to see Mrs. I., aged about twenty-one years, six months previous to her marriage. She was then suffering from a dry cough and breathlessness, and was unable to walk for any distance, even on a level pavement, without feeling more or less out of breath. The breathlessness was sensibly increased on ascending an incline and very markedly so on going up a stair, when she had always to halt on each landing for awhile. On examination I found her suffering from mitral disease—presystolic. Being a lady of good personal appearance, and affable manners, I inquired whether there was a prospect of marriage, and, being answered in the affirmative, I considered it my duty to warn the parents and the gentleman to whom she was engaged, that the consequences might be disastrous. The announcement of the nature of the disease took the friends somewhat by surprise, and I suggested that the late Dr. J. W. Begbie should see her. He confirmed my diagnosis and advised pretty much as I had done, saying that though not necessarily certain of a fatal termination, still there was a very great risk involved in the proposed matrimony. As usual, under similar circumstances, the physician's advice was not taken, and the marriage took place. For two months or so the patient was well, but on becoming pregnant symptoms of increased breathlessness now manifested themselves. These continued gradually getting worse as pregnancy advanced, until after the fourth month, when she could not lie down day nor night, and seemed in the greatest possible distress. Miscarriage then took place, and death followed in about thirty-six hours afterwards.

We have in Dr. Linton's case evidence of mitral stenosis in which the compensation had begun to be very distinctly interrupted before the commencement of pregnancy. But the introduction of that condition, with its disturbing in-

fluences upon the condition of the heart and circulation, speedily aggravated matters and led to an interruption of the pregnancy and a termination of life about the middle of the ordinary period of utero-gestation. It will be noticed that the severe symptoms came on about the middle of pregnancy. This peculiarity was pointed out by M. Peter and others, and is an undeniable fact. Whether or not the true explanation of the occurrence of these symptoms at this period of pregnancy is to be found in the assertion that the increased vascular tension due to the physiologically enlarging ventricle is the main cause of the disturbances cannot as yet be held to be established. In favour of this view being the correct one, it may be said that it affords at least a rational explanation of the disastrous influences introduced by utero-gestation into a case complicated with heart lesion of a severe form. If we assume (which we are usually correct in doing in such cases) that we had here a degree of incompetency of the mitral as well as severe stenosis of it, it is quite clear that an hypertrophied left ventricle could only aggravate matters already sufficiently bad by pumping back with increased force upon the pulmonary circuit a portion of the blood that each time struggled through the narrow mitral orifice. If, then, that narrowing of the orifice of itself kept the left auricle and the pulmonary veins distended with blood, and if by dilatation and weakness of the right heart, the latter not being co-ordinately strengthened by hypertrophy during pregnancy, the blood was imperfectly pushed forwards from behind, it is easy to see that a disastrous degree of pulmonary congestion, leading up to the gravest results, might be produced. In point of fact, suffocative œdema of the lungs, congestive bronchitis with or without actual pulmonary hæmorrhage, extreme dyspnœa, and cardiac irregularity, culminating in abortion and death, either during or shortly after delivery, form the sad circle of phenomena we are bound to expect in a pregnancy complicated with a badly compensated mitral stenosis. These are facts established beyond dispute, and I think for the credit of the profession, and the good of humanity, they cannot be too strongly emphasised. I can scarcely too highly estimate the wisdom, conscientiousness, and sense of honour exhibited by

Dr. Linton in endeavouring to interfere with the mournful sequence of events at a time when, if his advice had been followed, he would have benefited his patient, and saved this poor lady and especially her friends a great deal of trouble and sorrow. It is painful to think that though duly warned against it the imprudent step was taken. I think it is to be regretted that Dr. J. W. Begbie did not more decidedly support Dr. Linton in the case, and the hesitancy exhibited in his opinion seems to me to establish the necessity of laying definite and well-matured views in regard to this subject before the members of our branch of medical science and practice. Had Dr. J. W. Begbie known that this cardiac lesion was certain to be so very fatal when it arose in connexion with pregnancy, I cannot doubt but he would have given a decided negative to the proposal of marriage, and thus might have led to its being put off at any rate, and have saved the friends from being parties to this young lady shortening her days.

The amount of the physical signs is somewhat brief in this record, so that it is difficult to tell what was the direct cause of death. But from what we know of other cases, I do not hesitate to say it was most probably due to suffocative pulmonary œdema. One of the most curious points in these cases seems to be, that though the labour is usually got over without much distress the danger to life is not thereby removed. This, it seems to me, takes away all ground for recommending premature labour in cases in which there exists no abnormal abdominal dilatation. To my mind the most probable explanation of the above fact is as follows. The hypertrophied ventricle does not at once return to its natural size, consequently after delivery you have still the effects of the obstruction aggravated by a regurgitant stream of greater than usual intensity, and consequently the lungs are maintained in a condition of constant hyperæmia. Besides this, the shock of the labour exerts doubtless a very depressing effect on the already weak heart.

*(To be continued.)*



ON KOLPOKLEISIS AND OTHER ALLIED  
PROCEDURES,

AS MEANS OF TREATING VESICO-VAGINAL FISTULE.

*Being an Answer to the Article of the late Prof. Simon of Heidelberg, entitled "A Comparison of Bozeman's Operation with that of the Author."*

By NATHAN BOZEMAN, M.D., New York.

(Continued from p. 181.)

HAVING learned from Professor Simon's letter to what extent he and his followers in Germany had carried the operation of kolpokleisis, and having become convinced of the greater advantages which are secured by my dilating speculum and support for the knee-chest position in the treatment of vaginal atresias and of the fistules which complicate them, I was led to the conclusion that kolpokleisis, which I had regarded up to this time as deserving favour, might in future be greatly curtailed in the range of its employment. I discovered that out of *eight* indications laid down by Professor Simon for the application of kolpokleisis, in only a single instance, according to my experience, was the operation admissible—viz., loss of tissue and impossibility from coexisting atresias of bringing the two sides of the fistule together. Even under these circumstances I began to think that, by greater perseverance in the preparatory treatment, in which, as before remarked, I had made so decided improvements, kolpokleisis might be avoided. Becoming strengthened in this conviction, my investigations and observations finally presented the whole subject to my mind in a new aspect, bearing upon the moral, chemical and physical results of the operation. Upon these several points I hope at some time to speak more fully. It will suffice at present to say that patients came under my notice presenting reactionary complications of the most dreadful character, whose fistules had been treated by such expedients as felling their edges, or folding them in the bladder, sometimes at the expense of incarcerating the cervix uteri in the bladder, and not seldom of obstructing the urethra—these expedients all growing out

of the necessity of securing broad refreshed surfaces in the operation and of increasing the chances of success as regarding the relief of incontinence of urine.

At this juncture, and in this train of investigation, I conceived it to be of the greatest practical interest to learn the condition of cases, after some years, in which the operation of kolpopleisis was known to have been completely successful. I accordingly addressed a note to Dr. R. P. Means, of Hickory Grove, Ala., who had had my first and only patient upon whom kolpopleisis had been performed under observation for several years, requesting him to make a thorough investigation of the case and report to me the result. Here is his answer :—

“Jane Finley is living, and her general health is very good. She can retain her urine while walking about sometimes, but it occasionally dribbles. If when lying down she immediately answers the call to urinate, she can retain the urine long enough to get up and go outdoors. She does not complain of any pain, but says that she used to retain her water much better soon after the operation on her than she can now.”

About the same time I wrote to Professor Wernher, of Giessen, who was the first in Germany to secure a complete result from kolpopleisis, as stated by Professor Simon in his writings, and from him I received the following reply, dated December 12, 1869, with regard to his case :—

“My patient died last summer. At the autopsy, I found in the vagina, above the seat of closure, a stone as big as a pigeon’s egg.”

A few months after I had learned the unfortunate result, at the end of twelve years, of Professor Wernher’s case, and had ascertained, after the lapse of ten years, that time was becoming more and more envious of the success in my first and only case, there came under my care, by a strange coincidence, a case of spontaneous kolpopleisis, which not only confirmed the two reports just cited, but thoroughly convinced me that the expedient, *at least, was only temporary in its beneficial results, and that, from its liability to be followed in a large proportion of cases by sequences dangerous to life, it ought to be condemned.*

In an article published in the *American Journal of Medi-*

*cal Sciences*, of July, 1870, I reviewed the subject, and after sharply criticising the eight indications which Professor Simon had laid down as a guide to the operation, I reported in detail the case of spontaneous kolpokleisis above referred to, which I here copy as an argument in support of the correctness of the position I then took. I said :—

“ Under our treatment at this moment is a fair example of Nature’s kolpokleidic operations, in which, after having covered up and hid away old lesions, she has left the parts in a state analogous to that of surgical obliteration. The results before us teach what are to be expected from the latter, and confirm the previsions of pathological chemistry.

“ Mrs. —, of —, Alabama, aged twenty-three, a perfectly well-formed woman, after a first labour of eighty-four hours, March 31st, 1865, lost, by sloughing, part of the lower third of her vagina, which, on healing, left a small urethro-vesico-vaginal fistule, and a recto-vaginal fistule higher up, with loss of control over the passage of either urine or fæces. Under this persistent local irritation, the vagina just below the urinary fistule continued, however, to contract, enfolding both fistules until by degrees she had regained control over the excretions. Her general health improved, but eighteen months after the first injury, and in the fourth month of a second pregnancy, she miscarried. Cystitis soon after set in, with a profuse discharge of bloody mucus. Five or six days of such painful inflammation continued, recurring at intervals of three or four months. It seemed to be provoked by the exertion of standing or walking too long. Still menstruation remained normal, and general health fair, with increased retentive power. By the end of the third year her vagina seemed completely closed; she lay dry all night, and could walk about in the day for several hours at a time without dribbling. But now came a change for the worse. Upon over-exertion she became conscious of a fulness, as though something in the lower part of the vagina was pressing to come away, with urging to micturate every few minutes. This trouble increased until it culminated in an attack of cystitis. The urine, now always turbid, deposited a thick tough slime, and smelled very strong after standing a little while. A year ago fatigue in nursing a friend brought on a severe attack, which continued a whole month. The sanguinolent or brown turbid and offensive character of the urine has continued from that time with variations in degree up to the present date, at which we find it largely mixed with pus. During the past year her health has suffered much; she has become excessively nervous, and her menstruation painful. A deep-seated pain is assigned to the left ovarian region, and soreness is complained of over the whole abdomen. Since last autumn the flow has lasted but two days, and the epochs been retarded eight or ten days. Excruciating lumbar pains coincide with the cystic exacerbations at

intervals of only eight or ten days. She has repeatedly swooned from their severity, and remained for hours unconscious. This unrelenting march in the gravity of her condition produced a state of anguish which, without positive derangement of mind, still urged toward suicide, but in this contention of spirit wiser counsels happily prevailed, and she has sought from the resources of surgery a salvation to which Nature has proved inadequate, although she had effected complete kolpoplexis, '*that most important plastic operation which, in the last decennia, has originated from one single man!*'

"*Actual State, March 10th, 1870.*—The vagina admits only a No. 6 bougie. The urethra is closed half an inch from the meatus. The vulva is much excoriated, with scalding on passage of urine, which has been the case from the first. Attempts to dilate the vaginal stricture cause extreme pain.

"*Preliminary Operations.*—Our first indication being to restore the vagina, we proceeded, after etherization, assisted by Drs. T. C. Finnell and J. H. Hinton, of New York, to cut deep into the cicatricial band, from  $\frac{1}{2}$  to  $\frac{3}{4}$  inch thick along its sides. Then we incised the posterior wall, introduced our speculum, and exposed the vagina above, which was deeply congested and dotted with little red spots over its anterior wall. A small urethro-vesico-vaginal fistule was brought into view, just within the point of vaginal occlusion, and admitted a No. 4 bougie. The vaginal surface for nearly an inch above this point was studded with granulations that bled at the slightest touch. The neck of the womb was much enlarged, and its mouth patulous. Pus escaped with the urine through a catheter in the bladder. We all three verified the purulent character of this discharge. The recto-vaginal fistule was reopened by our dilatation of the vagina. Spontaneous atresia of the vagina had here restored continence of urine by drawing the small fistule up into the cicatricial band. The vaginal muscles could then aid the sphincter vesicæ in controlling the flow of urine through the urethro-vesical and vaginal orifices almost in juxtaposition. The urine, however, flowing into the vagina, had attacked its mucous membrane and the cervix, as betrayed by their congested, hæmorrhagic, and patulous state. Endometritis and ovaritis had supervened upon the cystitis and vaginitis. The discharge of muco-pus tinged with blood is now about half a pint in twenty-four hours. The subjoined analysis by a highly competent person—Dr. Wm. B. Lewis, of this city—was made on a specimen of the urine drawn at the last exacerbation of our patient's cystic trouble, which occurred a few days after the operation preceded:—

"*March 18th.*—Odour pungent, aromatic. Colour and appearance, reddish, densely turbid. Sediment, after standing, one-eighth bulk of specimen, rather close, but light, of a brownish-white colour. Reaction, alkaline. Specific gravity, 1025. Earthy phosphates completely precipitated from supernatant fluid, but chlorides abundant. Albumen: half of the whole volume. Microscopical: oil globules, minute crystals



of triple phosphates, pus corpuscles, amorphous urates and epithelium from the bladder. No casts were found. If present, they would be discovered with great difficulty, as the strongly-marked chemical characters of the specimen cloak the organic sediments and render their microscopical characters indefinite.

“The objects discovered by the microscope are in great part such as are naturally observed in alkaline urines. The features of this specimen indicate that the cystitis from which the patient suffers is largely due to retained urine and pus. The large proportion of the latter accounts for the albumen present.”

“We should state here, while the general character of the urine in this attack remained the same, as observed by the patient for months before this preliminary operation, there was marked amelioration in her sufferings. Only for a few moments at one time was the pain so severe as to cause swooning. The paroxysm was much shorter than usual, lasting only about two days, but the flow of mucus and pus continued the same as formerly, though diminished in quantity.

“The patient’s good constitution and the conservative reactions of her organism during the earlier stages of her traumatic malady, its continued and vigorous efforts for self recovery, more frequent in ratio to the local irritation; in short, the whole picture before us confirming and elucidating the pathologic history forbids us to attribute the decline of health or sympathetic sufferings to other than hydraulic and chemical causes—viz., the stagnation of urine retained in contact with mucous surfaces unprepared to resist its irritating salts, and whose exudations of protective mucus have but increased the mischief by accelerating putrid fermentation. To open a free passage for discharge of these morbid secretions is the first step dictated by experience towards removing their causes.

“We do not exhibit the foregoing as anything more than the particular application of a general principle. Lesions, apparently the same, occasion different degrees of suffering in different patients. European, and especially German, peasant-women, may be more robust, more phlegmatic, than our American women, but chemistry and mechanics are invariable. To their laws are due the fearful sufferings we have witnessed in case of spontaneous kolpopleisis, and we venture to suggest that if the luminaries of German surgery will descend from their Olympian heights, look up their kolpopleidic cases, and look into them again, they will see cause to change the note of triumphant gratulation with which Professor Simon announces his successful operations.

“In the annals of surgery, nay, even in those of psychology, we have met with nothing more astounding than Professor S.’s assertion, by a gentleman of Professor Simon’s rank in our profession, that, after effecting kolpopleisis, the urine becomes healthy and does not harm the uterus, when we consider the deep pocket formed in the vagina with no other outlet than the small fistule into the bladder. These fistules, moreover, are very often found at the highest point of the vaginal

pocket, thus favouring the retention of urine, which at every menstruation will be mixed with the blood of this eliminative secretion, an admixture which can hardly fail to promote decomposition and its irritative sequences. Would Professor Simon attribute then, to the vaginal mucous membrane, the property of arresting fermentation, of preventing those well-known changes which urine undergoes when long confined in the bladder, forming earthy deposits, calculi, and acrid ammoniacal lixivia?

“What is vesico-vaginal fistule? A solution of continuity, maintained in the vesico-vaginal septum by the passage of urine, the contact of which is a chief obstacle to the process of healing.

“In what does the cure of a fistule consist? In the union of its edges without serious lesion to the functions of the bladder, vagina, or uterus. No result inferior to this is a true cure, however complete the continence of urine. This physiological standard should never be lost sight of in our choice of remedial methods. What is kolpokleisis? The conversion of the vagina into a urinal, with prevention of the sexual act and generative function, restricting the uterus to the part of an excreting organ. Per contra, it claims to obviate the incontinence of urine.

“Of Professor Simon’s eight indications for kolpokleisis, we recognise as valid only the first one—viz., a loss of substance such as to prevent the coaptation and consequent union of the fistulous borders.

“No loss of substance can prevent a cure so long as the womb can be drawn down to fill the aperture. In cases where this seemed impossible at first, it has gradually yielded to our daily tractions with polypus forceps on the cervix and stretching of the surrounding tissues, until the two sides of the fistule would meet. This once effected we feel confident of cure by our button-suture. Since its invention we have never had recourse to incisions, in order to relax tissues and take the strain off our sutures, as Jobert was so much in the habit of doing, and as Professor Simon, after condemning it, has been fain to practise likewise. Even when a force of several pounds had been needed to bring the sides together, our button-suture has always sufficed to maintain them in apposition until their complete union. Incisions we apply only to the preliminary treatment of cicatricial bands, or to points of atresia, which, after opening, we dilate with tents, not attempting to close the fistule until we have removed, as far as possible, such obstacles.

“All Professor Simon’s indications precited, except the first, have been met and overcome in our practice, without having recourse to kolpokleisis. At ‘uretero-uterine’ fistules, indeed, we may place a point of interrogation, for their diagnosis does not appear to us well founded in the cases stated. Bérard describes such a case in full detail. He injected coloured fluids into the bladder, he introduced a probe into the cervical canal, and another through the urethra, so that it should strike the first, if a fistulous communication existed. He measured separately the fluid escaping from the vagina, and what

escaped from the urethra; he smelt what escaped from the os uteri. Now such means may aid in ascertaining the existence of a vesico-uterine fistule, but they cannot determine whether the communication between the uterine cavity and the urinary apparatus occurs at a point beyond that of the normal contiguity of these organs. A fistule  $x + y$ , of track unknown, may exist; the precited means of diagnosis may fail to prove it vesico-uterine; they cannot, however, prove it uretero-uterine, and we have seen vesico-uterine fistules in the diagnosis of which they failed, because of the extreme smallness of the fistulous track and its valvular condition. We have been unable to pass a coloured fluid through it from the bladder in quantity sufficient to be seen in the cervical canal; nor could we pass a probe, however delicate, in the same direction, yet the two streams of urine—one from the vagina, the other from the bladder—always flowed separately. Was this a proof that the urine of the vaginal stream came from the cavity of the womb? *Post hoc, ergo, propter hoc*, will not answer here, as the linen test has frequently attested in our hands. By this test we have detected the precise situation of a passage between the bladder and the cervical canal, even when the fistule was too small to be seen by the strongest reflected light. In one case cured by us, January, 1869, the point of communication with the cervical canal was near the internal os and the fistulous track above, bounded only by the utero-vesical fold of peritoneum; this membrane was punctured while operating, but no serious consequences ensued. Here, even when the cervical canal was fully dilated, a strong reflected light failed to reveal the fistulous orifice, although while the patient lay upon her back the urine flowed freely from the os externum. Now, on mopping dry the cervical canal, and laying a bit of old linen on its anterior wall, its saturation showed at once the orifice at that point, by closing which we cured the patient.\* No organ was injured, no function compromised by our operation."

With regard to the subsequent history of the case above cited, I have only to add that the improvement which was indicated after the preliminary operation was continuous. Under repeated incisions and gradually increased distension of the vagina, one sequence after another slowly disappeared, but it was not until the dilatation had been carried to a diameter exceeding six centimetres, which required several months to accomplish, that the bladder was found to be in a sufficiently healthy condition to justify its closure by suture. One operation with my button-suture proved suffi-

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\* For the *linen test*, see our more extended notice in the "Transactions of the New York State Medical Society," p. 154, 1869.



cient for this, and several months later a like result by the same means followed the operation upon the recto-vaginal fistule. The latter at the time of the operation was almost large enough to admit three fingers into the rectum. This augmentation in size resulted from the inelasticity of the surrounding nodular tissue and the high degree of vaginal dilatation found to be necessary ; but, notwithstanding this seemingly grave complication of the preparatory treatment, it proved of no consequence, as, by gliding healthy tissue from above, the closure of the fistule was easily effected at a single operation. At the end of eight months the patient was discharged perfectly cured, with preservation of the functions of all the organs involved—a condition of health in which she has continued ever since, now nearly seven years. Only a few weeks ago I heard from her, and the report was most satisfactory.

The lessons of the above case are most instructive. In this instance, kolpokleisis, resulting from the blind operations of Nature, was scarcely less effective than if it had been produced by the knife of the most skilful surgeon. Yet how important it was to undo Nature's handiwork in order to save the life of the individual. Like causes produce like effects, and there is no reason to think that the results in this case would have been better had kolpokleisis been effected by the surgeon's knife, no matter how expertly and judiciously it might have been used.

It is scarcely necessary to say that, holding this opinion, I visited Heidelberg in the autumn of 1874, to learn from personal observation what I had so long wished to know—namely, the German operation for vesico-vaginal fistule, as performed by the master himself. I was most kindly received by Professor Simon, who invited me to take part in the treatment of a considerable number of cases which he was then expecting to enter the clinic of the University, thus showing himself to be the true physician. Our distinguished *confrère*, Mr. Spencer Wells, was present at the opening of the *concours*.

Seven operations in the aggregate were performed upon six



cases—four by Professor Simon and three by me (two jointly upon the same patient). Professor Simon has described all these cases and operations in his article, together with the five additional operations which he found necessary to complete the treatment after my departure from Heidelberg.

Our results may be tabulated thus :—

Upon 7 fistules in 6 patients 13 operations  
Case were performed

I.*	1	„	1	„	3	„	by Prof. Simon ; completely cured with preservation of the generative functions, but only partial restoration of continence of urine, owing to loss of urethral substance from repeated operations.
II.	1	„	1	„	2	„	by Prof. Simon ; the first—six years previously—for completing a morbid kolkopleisis in the urethral portion of the vagina, with complete loss of the generative functions ; the second for reclosure of the same obliterated point after it had been reopened by the passage of a calculus. Death on the sixth day. Autopsy showed suppurative pyelitis of both kidneys and the blocking up of the left ureter by a calculus.
III.	2	„	1	„	2	„	by Prof. Simon, after the removal of a previous kolkopleisis by another surgeon, with restoration of the normal outlet of the catamenia and of continence of urine, though a ring-formed contraction of the vaginal orifice still remained as a serious impediment to the generative functions.
IV.	1	„	1	„	3	„	by Prof. Simon, after incisions and immediate distension of the vagina, with restoration of continence of urine, and maintenance of the normal outlet of the catamenia ; but there afterwards remained obliteration of the vagina above the fistule to the size of a No. 10 bougie, and loss of general functions.
I.	1	„	1	„	1	„	by myself, and was completely cured, with preservation of the generative functions.

\* The numbering of the cases in the above table corresponds with the order in which they were reported in the Paper of Professor Simon.—See the OBSTETRICAL JOURNAL, vol. iv., p. 436 et seq.

Case

II. — „ — „ I „

by myself, after seven-eighths closure of the original fistule by Prof. S. (little Russian), with the result of almost complete closure; but the success was afterwards lost by reopening of the fistule, due mainly to an abnormal relationship of the parts, brought about by the preceding operation, which condition of the case could only have been avoided by reproducing the original fistule and making the closure *de novo*.

III. I „ I „ I „

by myself (after the patient had been pronounced incurable by Prof. Simon, and condemned to complete obliteration of the vagina—*kolpoplekisis*) with complete preservation of the generative functions and closure of the fistule to a point, quite simple, and admitted by Prof. S. himself to be easy of cure at another operation.

Of the four cases treated by Professor Simon and estimated by my standard of cure, one (25 per cent.) came completely up to it, and two partially, with a death-rate of 25 per cent.

Of the two cases treated by me, one came completely up to the mark, and the other so near it that no one for a moment questioned the practicability of its completion at another little operation—100 per cent.

(*To be continued.*)

## PUERPERAL ECLAMPSIA.\*

(*With Notes of a Case.*)

By THOMAS OLIVER, M.B., Preston.

M. A., twenty-three years of age, was delivered of a full-grown female illegitimate child on the morning of the 31st January last. She was a woman of ordinary size, well developed, and sallow in appearance. As regards her previous health, it may be said that she had two attacks of scarlet fever in childhood—one at the age of seven, and the other at eleven—attacks attended by a well-developed rash, both of which,

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\* Read before the Preston Medical Society.

however, passed away so as to leave no apparent indication of constitutional contamination. She enjoyed thereafter very good health, but was often reckless, for three years ago she slept on some straw on a stone floor, which was followed for a few days by a feeling of pain in the loins. With this exception, and that of the attacks of scarlet fever in childhood, her health may be considered as having been good, even up to the day of labour; for, excepting very slight and transient œdema of the feet in the latter part of the eighth month, nothing appeared to excite attention, or to damp a buoyancy of spirit which, through the months of pregnancy, characterised all her actions.

On the evening of the 30th January she went to bed about 10 P.M. in her usual health. About an hour and a half afterwards she awoke in pain. Her mother, who was sleeping in an adjoining room, and was awakened by her moans, found her almost naked and on her knees on the floor. As the room was cold she lit a fire, and in about an hour afterwards sent for me. On examination I found the head very low down on the perineum, and in less than a quarter of an hour after my arrival her baby was born. The pains were strong, and just at the moment of expulsion of the head slight rupture of the perineum took place. The placenta was expelled without difficulty, and in a short time thereafter, as everything had gone on well, I left her lying snug and comfortable in bed.

When I saw her in the afternoon she had a pulse of 96, had passed urine, had not slept, and complained of being chilly, and of having vomited.

Between five and six in the afternoon I was asked to see her, as she had had two or three fits, during which she was completely unconscious. In the intervals she recovered consciousness, and it was in this state I saw her. There was no complaint of visual impairment or of severe headache. She had vomited. As she passed urine freely I was furnished with a specimen for examination. It had a smoky tinge, a sp. gr. of 1021, was highly charged with albumen, and contained numerous blood-cells, but no tube-casts were detected.

On the following morning—*i.e.*, the second day after delivery—I found her in a state of complete unconsciousness. She was violently convulsed, and had been, I was informed, all night through. As the seizure was typically uræmic in character, poultices were applied to the loins and nape of the neck, chloral was administered, and an enema of soap and water ordered.

In the afternoon her condition was much the same as in the morning.

When I saw her again in the evening I considered the case more hopeful, in so far as there was a seeming return of consciousness, evidenced by her forcibly closing the eyelids on irritation of the conjunctiva, and by her withdrawing the arm on pricking the skin; the absence, too, of casts in the urine, and the fact of delivery effected, biassed my prognosis. She was not then in a fit. At times she uttered an emotional cry. I passed a catheter into the bladder, but found it empty.

About midnight her mother raised her slightly in bed; hiccough set in, and the emotional cry continued. Her mother considered the return of consciousness more manifest now than in the afternoon, but she was in a few minutes fatally deceived by her daughter laying quietly back her head and peacefully expiring.

As her mother objected very strongly to a post-mortem, I took the opportunity (with the father's consent) of her visit to the registrar for opening the abdomen.

Bladder empty. Uterus much enlarged. The kidneys were slightly enlarged; the right kidney was driven up under the liver, and towards its left lobe. The vessels in the capsules of both kidneys were hyperæmic, and the capsule of the left was in places adherent. The kidneys on section were found to be dripping with blood; their cortical substance was very much increased, and of a pale yellow colour. Under the microscope the tubules were seen to be greatly distended with epithelial cells of a cloudy, granular, or fatty aspect; in many places the lumen of the tubule was occluded. The interstitial tissue was normal.

This case is remarkable in one or two respects: the



average good health of the patient, the latency of symptoms and the period of eclampsia, cannot escape notice. By some the renal change might be said to antedate the pregnancy in causation, and stress might be laid on the fact of two supposed attacks of scarlatina in childhood, and more lately of cold followed by pain in the loins, as having left an impression on the kidney, waiting for the pregnancy as an invitation for the latent tendency to show itself. Just as in the healthiest of all actions—the exercise of the human brain—there is the storing up of thought in the cerebral cells, so in disease there may be the acquisition of morbid tendencies by the cellular units of any organ which only await a disturbance of their molecular polarity for a manifestation of the potential energy. But is the appearance of the kidneys I have described indicative of chronicity? For many years renal mischief may be going on, and the patient move about and take part in the ordinary duties of life, until all at once he is struck blind, or has an epileptiform attack, and then only are we tempted to search for the cause, and find, as an aid to diagnosis, albumen in the urine. Such cases, however, as a rule, are characterised by a morbid substratum in the shape of contracted kidney, the atrophied result of long-continued decay. In the case of M. A. the kidneys were not contracted, and so the probability is the pathological change was recent.

If we admit the possibility of a chronic existence, then the case is one of a patient with Bright's disease becoming pregnant. Now, the teaching of modern times is that pregnant women, the subjects of Bright's disease, exhibit a marked tendency to abort, and as the patient under consideration consulted a quack practitioner in the Orchard, from whom she received medicine for the purpose of procuring abortion, the probability is that the kidneys were comparatively healthy at the period of impregnation.

Sir James Simpson was the first, I believe, to draw attention to albuminuria connected with pregnancy. The picture of albuminuric pregnancy and its attendant eclampsia is too well known to us all. Is it then that our fears are groundless when we see day by day the oedema of the feet and the

puffiness of the face increase? or is there no cause for our anxiety in awaiting the precursory symptoms that may develop during parturition—a process which, in itself normal, can only now have an influence baneful in its effects on a nervous system reacting with a blood surcharged with the products of tissue metamorphosis? That a woman with kidneys almost totally disorganised, with a urine highly albuminous, and blood poisoned by the elements of uræmia, should have gone placidly through the process of parturition, its attendant pains, the exaltation of nervous sensibility, suffusion of the meninges, and the accidental coincidence of slight rupture of the perineum without that explosion of nerve-energy which was bottled up and deferred for another day, is to me a point with difficulty explained.

The speedy fatal termination, too, demands a word. In the last stage of Bright's disease we occasionally meet with suppression of the urine for some hours before death. Five or six hours before the death of M. A., I passed a catheter into the bladder, with negative results, and at the autopsy the bladder was found empty. Although the pathology of suppression of urine is obscure, the generally accepted opinion is that it is due to extreme congestion of the kidney, which was the condition in the case now occupying attention. It would seem that after an ordinary epileptic seizure the urine is almost always found to be albuminous, and its cause lies in an obstructed circulation. The degenerated renal epithelium imperfectly separating the urinary elements from the blood of M. A. would cause the uræmic seizure, and this being repeated would not only disturb the circulation, but the innervation of the kidney, and would be therefore the cause of the renal congestion which played an important rôle in the production of a fatal issue.

According to Roberts, it would seem that albuminuria in such cases only arises in the later months of pregnancy, and its causes are to be found in (1) pressure of an enlarged uterus on the renal veins and inferior cava, and (2) in the altered quality of the blood. Doubtless these two causes explain the majority. An explanation, however, is necessary

for those cases of albuminuria occurring in the second, third, and fourth months of pregnancy in patients not the subjects of Bright's disease. Martin, an American writer, informs us that albuminuria occurring in the earliest months of pregnancy in patients not the subjects of Bright's disease is more common than has hitherto been supposed. He quotes the case of a healthy lady who, when she passed a period or two, presented the symptoms of incipient uræmic poisoning. There was no doubt as to the reality of her illness, nor was there any doubt as to the causal relation between the symptoms and the state of the kidney, for the urine, which was passed in large quantity, and had a sp. gr. of 1010, was found, on examination, to contain albumen, granular and hyaline casts. A sound was introduced into the uterus, to its fundus, and in ten days thereafter the albumen had almost entirely disappeared from the urine. Two days after the introduction of the sound, the symptoms had ceased, and the patient considered herself well, although the uterus did not empty itself until the twenty-first day. The observation in this case extended over three pregnancies, each attended by the same morbid and curative result—that is to say, albuminuria always appeared on the occurrence of pregnancy, and the symptoms almost immediately disappeared on the death of the ovum. Now in Martin's case, as the pregnancy never reached the fourth month, there could be no pressure from an enlarged uterus, nor can the idea of altered quality of the blood be for one moment entertained. There is still another cause, and this, though gained from the misty and uncertain region of speculation, and on that account not so physically true and mathematically clear in its explanation as pressure from an enlarged uterus, is sufficiently clear through its physiological connexion as to be more than worthy of mere mention. Martin's observation verifies the connexion of albuminuria with the early months of pregnancy, but it also shows us that it is totally independent of the mere size of the uterus and its contents. It shows us that *albuminuria arising in the earliest months of pregnancy is associated with a growing vitality of the ovum, and an*

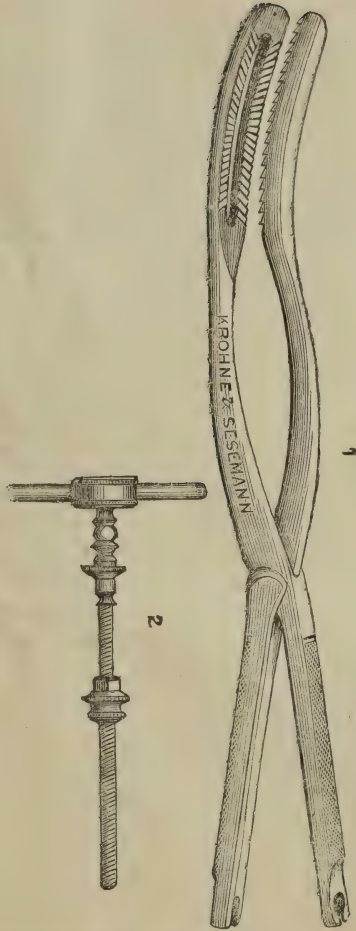
*increased functional activity of the uterus.* The fertilisation of an ovum must be followed by an impression being made on that part of the nervous system which guides the process of nutrition, and the uterus cannot become enlarged and develop itself as to be a suitable home for its growing tenant, nor be the means of its expulsion on the attainment of its majority, without the acquisition of nutritive force. The great sympathetic nerve underlies all these actions, the first steps of which are accomplished by the vaso-motor supply. Practically speaking, we have a blood ready to furnish material, and all we want is a capillary circulation made ready to take it up—a step which can only be accomplished through the agency of the sympathetic nervous system. We know that the uterus is supplied with nerves from the spermatic plexus, and anatomy teaches us that the spermatic plexus is chiefly derived from the renal. “With this close anatomical relation,” Martin asks, “is there not also a close physiological and pathological association?” The impulse sent forth by the common nerve-centre over one set of nerves to one organ may sometimes react and send a similar impulse through another set of nerves to another closely-related organ. A sort of internal reflex action may in this way be propagated from the uterus to the kidney; or, to speak more plainly, in the early months of pregnancy, when the uterus is in a state of increased functional activity, there may be the propagation of an influence from it to the renal nerves, which, lasting for a time, stimulates or alters the interstitial circulation of the kidney as to produce albuminuria.

This I believe to be the true cause of albuminuria in the early months of pregnancy. But, as interference with the circulation through any organ is followed sooner or later by an increase of its interstitial tissue, and, as in the case the subject of these notes, the interstitial tissue has been shown not to be increased, but normal, a more recent date must be assigned to the renal change—a date which will harmonise with the latency of symptoms, and which will in all probability be true if assigned to the seventh or eighth month of pregnancy.



## NEW INVENTION.

WE are glad to be able to insert an engraving of Dr. Roper's new craniotomy forceps, which were shown at the June meeting of the Obstetrical Society of London, and of which an account will be found in the report of the Society's proceedings. Most accoucheurs must have learnt by experience that Dr. Barnes's craniotomy forceps, while very admirable in the hold upon the cranial bones which they afford, are sometimes rather difficult to lock. Dr. Roper's combination of the blades of Dr. Barnes's craniotomy forceps with the lock commonly used in English midwifery forceps appears to be a distinct improvement. The instrument is made by Messrs. Krohne and Sesemann.



### Abstracts of Societies' Proceedings.

#### OBSTETRICAL SOCIETY OF LONDON.

*Meeting, June 6th, 1877.*

CHARLES WEST, M.D., F.R.C.P., *President, in the Chair.*

The following gentlemen were elected Fellows of the Society:—Walter Turvil Colman, M.R.C.S. (Brighton), George Kenwell, M.R.C.S. (Liverpool), William W. Stainthorpe, M.D. (Wickham Market), and Fred. H. Varley Grosholz, L.K.Q.C.P.I. (Manchester).

Dr. BARNES showed for Dr. Beck, of Fort Mayne, Indiana, an instrument for application of perchloride of iron to the cavity of the uterus. The author considered that such injections were often of great use, but thought, nevertheless, that he had himself destroyed two or three lives by means of them. If a double catheter was used, the stream was not thrown with sufficient rapidity. The instrument invented by him consisted of a brush to be dipped in the styptic solution. This was guarded by a glass tube, within which it could be introduced into the uterus, and it was then extruded by means of a piston.

Dr. BARNES showed a flexible galvanic intra-uterine stem pessary, composed of zinc and copper wire coiled into a tube. He used intra-uterine stems very rarely, but they were useful in some cases of amenorrhœa when the uterus was small, and in some of membranous dysmenorrhœa. Most of the stems used had the disadvantage of being rigid, and destroying the mobility of the uterus, and the flexible stem of Dr. Greenhalgh was apt to become foul. He was accustomed to use the stem shown for one week only at a time, and to keep the patient in bed.

Dr. AVELING mentioned that he had shown a stem of precisely the same construction to the Society a year ago.

Dr. BARNES said that he was glad to hear it, since the experience of each would support the other.

The PRESIDENT remarked that the concurrence of two such authorities was strong testimony in favour of the instrument.

Dr. ROPER showed a new form of craniotomy forceps. The blades were like Barnes's craniotomy forceps, but were fitted with a lock like that used in English forceps, and with handles and screw like Hicks's cephalotribe. The same screw would then serve for the cephalotribe and craniotomy forceps. He had found the pin and slot in Dr. Barnes's instrument very awkward to lock. He showed also a modification of Dr. Hicks's cephalotribe, in which the blades ended in rounded instead of square heads, and were therefore easier to introduce.

The PRESIDENT said that the lock in Dr. Barnes's craniotomy forceps was that of Brunninghausen. The button appeared to be rather too small for convenience in locking or security. He thought that Smellie's lock, as commonly used in England, answered all ends.

Dr. BARNES said that the novelty in his craniotomy forceps was not the lock, but the shape of the blades, which allowed a firm hold without tearing.

Dr. WILTSHIRE showed specimens of Ferguson's speculum made of toughened glass. It was manifest, however, that their strength was not without limits, since two of them, on being thrown down rather roughly, were broken to pieces. They were sold by Messrs. Maw at the price of five shillings.

*The Pathology and Treatment of Membranous Dysmenorrhœa.*

By JOHN WILLIAMS, M D.

The author remarked that the affection was one of supposed rarity, of great obscurity, and its treatment was generally very unsuccessful. The paper consisted of a narrative of fourteen cases of the affection, twelve of which had come under the author's own observation, a microscopical description of the membranes expelled, the method of treatment adopted in the cases, and conclusions drawn from the above data as to the nature of the affection and its treatment. Among the recorded cases the following were the most important:—

CASE II.—H. S., married nine years, had had one child, seven years ago, labour being difficult. Menstruation had commenced about the age of ten. It was regular at intervals of less than four weeks, profuse and painful. After marriage she continued regular for fifteen months before becoming pregnant. She suckled her child two weeks, had hæmorrhage for nine weeks after delivery, and then again became regular at intervals of three weeks, with as much pain as before her pregnancy. Clots or lumps of some kind had been passed from the first, and for the last few years she had noticed the expulsion of a membrane. She was subject to epistaxis, and hæmoptysis at the menstrual periods. The membrane was expelled on the third day, and the pain reached its maximum at that time. She had pain in the ovarian region, which was worst in the middle of the intermenstrual interval. She suffered from constipation and flatulence. She was somewhat anæmic, her tongue was coated, and she had a systolic mitral murmur. The uterus was large and retroflexed, the sound passing three and a half inches. The cervix was also eroded. She was under treatment for nearly three years, and wore a pessary. After that time the length of the uterus was reduced to two and a half inches. She had occasional cystitis, but the general health was improved in the intervals of the periods. All the symptoms, however, recurred every month, and the membranes were passed as before. Galvanism twice a week was then tried for two months. It was followed by hæmorrhage for a day or two, and no complete cast was passed at this time, but there was no permanent effect. Fuming nitric acid was then applied on two occasions, just after a menstrual period. A cast was passed two weeks later, but the next two periods were painless, though, after this, pain returned as before. A similar result followed the second application, but menstruation was afterwards not quite so profuse. The membrane passed formed a flattened triangle two and a half inches long, with a cavity in its centre, containing a thin clot of blood. Near the internal os it consisted mainly of fibrin, but in other parts of round and fusiform cells, especially the former. It was traversed by the canals of the gland-tubes, but no good columnar epithelium could be seen.

CASE XI.—S. D., aged twenty-five, single, had never been pregnant. Menstruation had been painful, but there was no history of mem-

branes being passed. She died of acute pleurisy on the fifth day of menstruation, and he was indebted to Dr. Coupland for the specimen of her uterus. The uterine wall was rather thick, and its inner three-fourths pale. Its condition was described in the author's paper on the mucous membrane of the uterus, published in the *OBSTETRICAL JOURNAL*. Three pieces of membrane were found in the uterine cavity. The surface beneath was flocculent and bloodstained, the mucous membrane in great part removed beginning from the internal os. A small patch near the fundus was not detached. The uterus was two inches wide between the orifices of the Fallopian tubes, the body rather round. There was excess of fibrous structure in the uterine wall. The membranes had a structure like that of a decidual membrane, but the matrix was fibrillar, and the fusiform cells rather larger than usual.

CASE XII.—E. A., aged twenty-four, had had one child five years before. Menstruation at first was regular and painless. At the age of seventeen she became anæmic, and her menstruation irregular. Of late she had been regular, the period lasting from six to fourteen days. On the third day a membrane was passed. The uterus was large and tender, the cervix abraded, and the left ovary was also enlarged and painful. Fumic nitric acid was applied to the interior of the uterus, but five months later, although the abrasion and other symptoms were cured, the membrane was still passed every month as before.

CASE XIV.—J. C., aged twenty-five, was sterile though married for some years. Menstruation commenced at the age of fourteen; it was not profuse, nor were any lumps passed. Five months after marriage an illness was brought on by retaining her urine too long while travelling. After this she suffered from incontinence of urine. While she was at New York, the cervix was dilated with bougies, and afterwards incised. She then wore an intra-uterine stem for three months. She then had an attack of pelvic peritonitis. In 1874 she first began to pass membranes at the periods, and this had continued from that time. The pain was at its maximum just before the membrane was expelled. The menstrual flow was often interrupted. The uterus was slightly anteflexed, the os patulous in consequence of incisions, the cervix engorged. The passage of the sound produced pain; the ovaries were enlarged and tender; and she suffered from leucorrhœa. The membrane was generally shed in pieces, but once in a complete cast. Usually it was thin.

As to the pathology of membranous dysmenorrhœa, some thought that it was the result of inflammatory exudation, in other words an exfoliative endometritis. In all cases there was evidence of inflammation of the interior of the uterus, but this was rarely to be seen at an early stage, and he believed that in all cases the inflammation was secondary. False membrane might indeed be formed upon the uterus, but only from acute or specific inflammation, while even young girls were subject to membranous dysmenorrhœa. It had



nothing therefore in common with croup or diphtheria. Dr. Godson had sent him a cast of the uterus consisting of almost pure fibrin, and other similar cases had been recorded; these were the true analogues of plastic bronchitis. But generally the structure of the membrane expelled showed it to be the decidual membrane cast off by the uterus at every menstrual period. It was needless now to notice the theory that it was due to repeated abortions, for it was acknowledged that virgins are subject to membranous dysmenorrhœa. The decidual membrane normally formed every month was a quarter of an inch or more in thickness, but the decidual membrane not more than one-eighth; it could not therefore be due to hypertrophy of the decidua. In eleven out of the fourteen cases the membranes had probably been expelled from the first, although they had not been recognised. In five of the cases menstruation was irregular, and in five only was it profuse. His conclusion was that there was not an excess but a defect in the evolution of the mucous membrane, and that the enlargement of the uterus was secondary. The one common element in all the cases was *excess of fibrous tissue* in the uterine wall. This might exist either in subinvolution or in an undeveloped uterus. As evidence that there was no excessive evolution of the mucous membrane he quoted a case recorded by Hausman. Menstruation commenced at fifteen, and had been regular. The patient had had a child stillborn at seven months two years before. Death took place after ovariectomy. The uterus was found to be indurated, its length 7.5 cm. (3.1 inches). The mucous membrane was pale, and portions of it, from 1.0 to 1.3 mm. in thickness, were loosened. Excess of fibrous tissue was a sufficient cause of the affection, for fibrous tissue always perished in mass instead of disintegrating. So a fibrillar condition of the matrix caused the decidual membrane to be thrown off in mass.

The most effectual treatment was prophylactic, to promote the evolution of the uterus in the young as much as possible. Fuming nitric acid had failed in his hands, and so had the application of electricity by the continuous current. Possibly the use of galvanic stem pessaries might be more effectual, but any treatment must be of long duration to be of any service. The paper ended with the following conclusions:—

1. The dysmenorrhœal membrane is not the product of conception but the decidua ordinarily shed as debris with every menstrual epoch.
2. It is expelled as a whole, or in masses, in consequence of an excess of fibrous tissue in the wall of the uterus; this excess is due to imperfect evolution at puberty, imperfect involution after parturition, or abortion, or is the product of acute inflammation.
3. The membrane is neither the result of an ovarian condition nor of an hypertrophy of the ordinary decidua.
4. The chronic inflammation present is the result of the monthly expulsion of the decidua in masses from the uterus, and plays an accidental part only in the formation of the membrane; the in-

flammation may, however, be independent of the expulsion of the membrane, but it has no causal relation to the formation of the latter.

5. Sterility is not necessarily associated with the affection, but is the result of the condition induced by the expulsion of the membrane in masses from the uterus—inflammation of the uterus and ovaries.

6. The membrane may be expelled without pain.

7. Inflammation of the uterus greatly aggravates the suffering caused by the passage of the membrane along the cervical canal.

8. Great relief may be obtained by curing the inflammation of the cervix, though the membrane continues to be expelled every month.

9. In order to effect a cure, the structure of the whole of the body of the uterus must be altered; the excess of fibrous tissue must be removed.

Dr. CLEVELAND said that these cases might sometimes put us in an awkward position. He mentioned the case of a young lady who was about to be married, and who passed a cast of the uterus. Her mother brought him the product, which had aroused her suspicions. As to treatment, no mention had been made of morphia suppositories, which he had found useful in palliation.

Dr. BARNES said that the paper illustrated the fact that a good paper was most difficult to discuss, being so little open to criticism. One proposition correctly laid down in it was of extreme importance—namely, that the dysmenorrhœal membrane may be passed by virgins. Nothing was proved to be the product of conception, unless either the embryo or the chorionic villi were found in it. Certainly there were two or three kinds of dysmenorrhœal membrane. In some there was only a fibrillar structure, without any evidence of the presence of the elements of the uterine mucous membrane; yet these might form a triangular cast of the uterus. Others again consisted simply of clot. The chief result of Dr. Williams's paper was his theory that membranous dysmenorrhœa was due to excess of fibrous tissue in the structure of the uterus. This would explain the singular obstinacy of the disease. He thought some cases were due to stenosis of the os externum, and the constant effort of the uterus to expel its contents which resulted therefrom. The cure was, first to divide the external os with scissors, and then alter the nutrition of the uterus by the use of the flexible galvanic stem which he had shown that evening. The peculiar general conditions of the system at the menstrual period were often overlooked. There was increased nervous and vascular tension, and when there was any hindrance to the outflow, all this was enhanced. The indications, therefore, were to secure a free exit from the uterus, and then modify excitement by depletion and the administration of digitalis, bromide of potassium, and similar drugs.

Dr. FANCOURT BARNES asked whether Dr. Williams had found the dysmenorrhœal membrane in any case to consist of catarrhal pro-

ducts. Dr. Goodhart had shown him such a specimen, in which the structure was analogous to that of intestinal casts.

Dr. HAYES asked how it was that membranous dysmenorrhœa was so uncommon, if the view of its pathology brought forward by Dr. Williams were correct. It ought in that case to be a common affection, since an excess of fibrous tissue in the uterine walls was very frequent.

Dr. AVELING thought that the affection was due to hyperæmia. This was shown by the remedies which were found useful for it, calomel and the bromides being the most effective.

Dr. HEYWOOD SMITH remarked upon the great rarity of cases of membranous dysmenorrhœa. He thought there was much force in the view of Dr. Barnes as to the effect of stenosis of the external os in its causation. From the effect of the obstruction, the decidua was retained whole, and became more organised and consolidated. He thought local treatment most likely to be of service. The application of strong nitric acid seemed, from Dr. Williams's cases, to be of little use. He had found, however, some benefit from the application of carbolic acid, or that of potassa fusa to the lower third of the uterine body, but not so as to produce too violent a caustic action.

Dr. GALABIN agreed in the main with Dr. Williams's view as to pathology, but thought the evidence not quite conclusive as to his theory of the causation, in which he separated the affection entirely from congestion or chronic inflammation, and considered it to depend solely upon excess of fibrous tissue in the uterine walls. It was not quite obvious that a permanently fibroid condition of the uterine wall, so common a state, would produce excessive fibrillation of the mucous membrane, which was constantly being renewed. As evidence that there was no hypertrophy of the decidua, it was stated that the membrane was thinner than the normal decidua, but it was scarcely yet finally proved that the whole thickness of mucous membrane was normally thrown off. Dr. Leopold had described a uterus on the third day of menstruation in which the mucous membrane was still thicker than that in the intervals, only the most superficial layer being thrown off; and he had himself found a fair thickness of mucous membrane in a case of death six days from the commencement and two from the cessation of menstruation. In examinations of menstrual fluid he had constantly found shreds of mucous membrane large enough to show the gland tubes, especially in the first two days of menstruation, and he thought that many cases partook in a measure of the nature of membranous dysmenorrhœa, though not recognised as such. By differences in the degree of disintegration was explained the apparent anomaly that in rare cases there may be stenosis or acute flexion absolutely without any dysmenorrhœa, while more commonly dysmenorrhœa is produced and is cured by dilatation or incision.

The PRESIDENT thought that the paper, like most good papers, had led to the raising in the discussion of more difficult problems than the author would find it easy to answer.



Dr. WILLIAMS, in reply, said that the subject was a difficult and obscure one, and the normal changes of the uterine mucous membrane in menstruation had a most important bearing upon it. He had not found any catarrhal products in the membranes, except an excess of round cells in the tissue. They consisted of the mucous membrane itself with all its parts. Catarrhal products might certainly be expelled, that is to say, mucus, which sometimes became hardened. As to the objection to his view of causation, that membranous dysmenorrhœa is very rare, he thought this was answered by Dr. Galabin's remark, that many cases partake of the nature of membranous dysmenorrhœa though not recognised as such. He thought that the affection was really the type of an immense number of cases of dysmenorrhœa, but that the membrane was not noticed unless thrown off as a complete cast. All menstrual fluid gave evidence of the disintegration of the mucous membrane, and in the great majority of cases of dysmenorrhœa in which he had had the opportunity of examining it, he had found shreds of the decidua. As to Dr. Galabin's objection that it is not proved that the whole of the mucous membrane is normally thrown off, he did not rest his opinion upon the comparative thinness of the dysmenorrhœal membrane. But he considered that though the evidence was not quite complete, it was strongly in favour of the view that, he would not say the whole mucosa, but the whole decidua was thrown off. Dr. Leopold had found mucous membrane remaining on the third day of menstruation, and he had himself found some not yet thrown off at that date. It was true that the decidua was not quite cleanly separated, being too intimately attached to the tissue below for that. A strong argument in favour of his view was that before complete detachment he had found a new decidua already being developed in the muscular wall. Dr. Leopold ignored a case of his, because the patient died of typhoid, but if the decidua were found removed, or being removed, in every instance of all diseases, the only conclusion could be that it was a normal process. His view that there was no hypertrophy of the decidua in membranous dysmenorrhœa was based upon the autopsies in which such a membrane had been found in the uterus. He did not understand how obstruction of the outlet could cause increased cohesion of the decidua, as suggested by Dr. Barnes and Dr. Heywood Smith. He did not attribute the affection to a chronic fibroid condition of the uterus, but merely to the presence of an excess of fibrous tissue, which was often a primary state in the ill-developed uterus.

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*A difficult Case of Labour in a Primiparous Woman who, having been barren for thirteen years, became pregnant after division of a deformed cervix uteri.*

By GEORGE ROPER, M.D.

Mrs. B., aged thirty-six, married thirteen years, sterile, suffered from dysmenorrhœa and pelvic pain. Menstruation was becoming scanty, and there was general distress. Coitus was painful, and



vaginismus existed. The perineum was also short. Dr. W. H. Day, under whose care the patient was, passed a small speculum, and found the cervix tapering and so small. No sound could be passed more than a quarter of an inch. He then thrust a small knife through the cervical canal, after which three to four ounces of blood escaped, and the sound could be passed a little further. At a later occasion he succeeded in passing a sound with the aid of an anæsthetic, and then introduced a sponge tent, followed by a larger one the next day. The next menstruation was more free, and the patient then became pregnant. Dr. Roper was called in when labour had continued for twenty-four hours. The head was arrested at the brim in the third position. A notch was felt at each side of the cervix; the vagina was small, and the perineum narrow. An attempt had been made to apply forceps, but they would not lock. Dr. Roper succeeded in locking his forceps, but could not bring the head through the brim. As the child was still alive, he then performed version, but no progress could be effected after a foot was brought down. The abdomen was then perforated and the thoracic viscera removed. There was much difficulty in liberating the arms, but it was at length effected by seizing the fingers by polypus forceps. The occiput was then perforated, but the head could not be brought down by the crochet, and there was no room to apply the cephalotribe. A wire was passed round the neck and affixed to an écraseur, but broke when it was tightened. The trunk was then cut off with a scalpel, the cephalotribe applied, and the head extracted without further difficulty. The mother did well, and went to church nineteen days after delivery. The author thought that the various conditions present in this case were connected in development, a masculine pelvis, a cervical cervix, a narrow vagina, and a short ill-formed perineum. It seemed as if Nature had been at first uncertain whether to make a male or female. A malformed cervix was generally associated with an imperfect vagina, and often with an absence of sexual sympathy. Such women were prone to unfounded jealousy.

Dr. BARNES admired the fertility of resource of Dr. Roper. Such could only be acquired by experience. He thought the suggestion about the correlation of deformities a new one. He had not himself noticed such a relation with regard to pelvic deformity, but perhaps had not looked for it sufficiently. But a conical cervix, dysmenorrhœa, and sexual apathy were certainly associated.

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#### OBSTETRICAL SOCIETY OF EDINBURGH.

*Meeting, January 24th, 1877.*

Professor SIMPSON, *President, in the Chair.*

Dr. MATTHEWS DUNCAN showed a specimen illustrating friability of the cord, and a female foetus in the third month of pregnancy with so-called torsion of the cord, for the latter of which he was indebted to Mr. Maxwell. The more specimens he saw of this latter lesion,

the more did he think it was, in many cases at least, an atrophy rather than torsion of the cord. When the cord lost its jelly, and the vessels therefore became prominent, it had a look of torsion; and even ordinary spirality of the vessels suggested torsion. In this case the lesion was at the navel, its most frequent position, and there was no appearance of torsion. Perhaps the structure of the cord at this part, as shown by Virchow, Lawson Tait, and others, accounted for its frequency at the navel. Dr. Duncan had seen repeatedly specimens shown as torsion when the cord was separated and still retained the twisted appearance. He thought that, to prove torsion, it should, when separated, partially untwist itself, and lose the appearance of twistedness. The degree of twisting or number of torsions might be made out by previously transfixing with a needle and observing the untwisting. Dr. M. Duncan thought his specimen of friable cord might throw some light on this matter. It was from an ill-developed male child, a few weeks premature probably, the son of healthy parents. The disease affected the foetal end of the cord, diminishing as the distance from the navel was increased. It was a flat or plump cord. At the navel it at once attracted his attention by its cheesy hardness. He resolved to tie it carefully; but the ligatures of twine thread cut it as if it were cheese; and the same happened when he used tape. Finally, he carefully tied it with tape; but he wished he had had Dr. Dickson's elastic silk tape which he recommended for tying all cords.

On examination of this cord by Dr. Underhill, at his request, it was found that on microscopic investigation of sections, hardened in Müller's fluid and frozen, parts of the cord are perfectly normal; parts are morbid. If a line were drawn bisecting it, and having the two arteries on one side and the vein on the other, the arterial half is mostly normal. On the half containing the vein, one is struck, on naked-eye inspection of the sections, by a broad band of tissue more deeply stained than the rest passing in an irregular curve round the vein at a short distance from it, and between it and the external surface of the section. This band is found to be composed almost entirely of round granular lymphoid cells, which lie in great masses, replacing, or at least hiding, the proper tissue of the part. This band extends over fully half the section; the cells are, however, not confined to it, but are scattered in smaller numbers over that half of the section, partly lying within the meshes of the trabecular structure, partly upon and among the trabecular fibres and cells; a few are found in the other half of the section where they are confined to the immediate neighbourhood of the bloodvessels. These lymphoid cells contain a large nucleus, some few of them two, which are coloured deeply by hæmatoxylon, and to a less degree by carmine. In a normal cord, which was examined for the purpose of comparison, there are none of these round cells to be found.

Dr. MATTHEWS DUNCAN showed in the foetus above spoken of as dying from torsion of the cord a peculiar hydrorachis. It was of

the size of a walnut, and its peculiarity was that it was truly neither a hydrorachis nor an encephalocele, for the sac communicated with the cerebro-spinal cavity by a hole in the posterior part of the occipito-atloid articulation sufficient to admit a large probe. It filled up the space between the occiput and neck.

Dr. MATTHEWS DUNCAN exhibited a remarkable specimen of an encephalous foetus, in the fourth month of pregnancy, for which he was indebted to Dr. Jamieson. There was absence of the whole anterior abdominal wall, or extreme exomphalos; the abdomen being closed by an expansion of the cord.

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*On the Therapeutic Action of the Secale Cornutum.*

By JAMES CUTHILL, M.D.

The well-known energetic influence of the ergot of rye upon the parturient uterus naturally led to the employment of such a potent drug in various other conditions of the system. It has accordingly been used most notably in the hæmorrhages generally, in hæmoptysis, in hæmatemesis, in epistaxis, in purpura, &c. More recently, it has been tried in cases of atony of the intestines, accompanied, as such a condition is liable to be, with irregularity in the alvine discharges, and the consequent generation of gases—flatulence in the bowels.

With the view of observing the effect of ergot upon the contractility of the smaller vessels, I have on recent occasions several times put a frog's foot under the microscope, and after, by means of the micrometer, noting the natural size of the vessels, watched the effect of the subcutaneous injection of ergotine, and on each trial have observed that most markedly the arterial radicles were reduced in their calibre to the extent of about one half, with accompanying stasis of the blood current.

Following out the observation, and remarking that this contractility must necessarily result from the action of the secale upon the fibres of the involuntary or unstriped system of muscles,—an influence which cannot reasonably be confined to one particular region of the body,—and whether we regard such contraction as occurring through the medium of the blood, or by the circuit of the cerebro-spinal or sympathetic systems of nerves, we are equally confined to the deduction that its virtue must be general and not local, and will in like measure be equally developed in whatever quarter of the body organic muscular fibre is plentifully distributed, and that its effects should largely extend to the heart, to the stomach and intestines, to the bladder, to the uterus, to the spleen and other viscera whose anatomical structure to a considerable extent partakes of this substance.

Accordingly, in a heart case which lately presented itself, in which the prominent symptoms were palpitation, with some degree of



valvular murmur and increased dulness over the cardiac region—in short, the ordinary signs of simple dilatation of that organ—liquor secalis cornuti was administered in 1 dr. doses three times a day, with marked benefit to the patient, and the gradual amelioration of all the symptoms. The success of such a case, of course, depended upon the absence of structural changes in the valves themselves, the pathological condition being want of tone in the cardiac muscular apparatus, or flaccid heart as it might be designated, valvular incompetency being caused by dilatation of the orifices occurring synchronously with enlargement of the organ, and not to changes in the size or capability of the valves, which resumed their natural functions when the organ and its orifices returned to their normal dimensions.

I have not as yet had many chances for making clinical observations of a reliable nature on the action of ergot on the other organs indicated, but hope in a future paper to do so when more extended opportunities present themselves.

In conclusion, I would beg to indicate that, were the effects of different drugs upon the elementary tissues—on muscle, striped and unstriped, on nerve tissue, cerebro-spinal and sympathetic, on areolar and fibrous tissue, and on the osseous and integumentary textures—correctly investigated, much simplicity would be imported into our knowledge of the action of remedies, and a veritable advance be effected on the progress of rational therapeutics.

Professor SIMPSON testified that from his experience he could not doubt the powerful effect which ergot exercised on the muscular fibres of the uterus. He had no experience of its effect on other unstriped muscles, but he thought it reasonable to infer that it should act in some way on them. He had found it a remedy of much service in some affections of the unimpregnated uterus, its power of producing contraction and shrinking being most marked, especially in cases of fibrous tumour.

Dr. ALLAN JAMIESON mentioned the fact that in certain districts cows, having partaken of ergotised grasses, aborted, thus proving the action of ergot on the uterus. Curiously enough, in those districts in which there were many geese, who were very fond of eating the ergot, the cattle were not so readily affected in this way.

Dr. JAMES YOUNG bore testimony to the powerful effects which, in his experience, ergot had on the uterus. In a patient whom Dr. Simpson saw with him, the bleeding from a fibrous tumour had been greatly controlled by the injection of ergotine, subsequent contraction and shrinking of the uterus took place to a considerable extent. In another case of irregular menstruation and profuse menorrhagia he had also used ergotine subcutaneously, and the liquor internally, with great advantage.

Dr. CRAIG was interested in Dr. Cuthill's paper and his boldness in carrying out these experiments in the face of the Act of Parliament which had recently been passed. He thought it was deeply to be deplored that such a measure should have been allowed to become



law. He thought ergot the best remedy in threatened abortion when the uterus was flabby and slight hæmorrhage taking place. He had recently treated a case of epistaxis successfully with ergot.

Dr. KENNEDY suggested that Dr. Cuthill should continue his experiments, more especially on the human subject. He referred to the value of ergot in the bleeding from varicose veins. He had seen it used with success in such cases in Germany.

Dr. KEILLER asked if any Fellow knew of a well-authenticated case in which ergot had produced abortion. This was an important medico-legal point, and one on which he had been frequently consulted. He was disappointed with its effects on the uterus in early pregnancy. It was generally supposed that it would produce abortion, but he thought this was doubtful. He referred to a case in which a medical man was accused of giving ergot in early pregnancy for the purpose of inducing abortion, premature labour having subsequently come on, causing the death of the female. He was asked to investigate the case, and to state his opinion as to the possibility of ergot bringing on the labour. The defence was that sarsaparilla was given, and not ergot. Chemical analysis having failed to detect the difference between the two drugs, the case fell to the ground. On the whole, his experience taught that, in early pregnancy, ergot did not act with sufficient power on the uterus to produce abortion. In the latter months, when the muscular fibres were developed, and in labour, when the fibres were prepared, or were already contracting, he had no doubt of the power of ergot in stimulating contraction, and thereby greatly facilitating the emptying of the uterus and diminishing the tendency to post-partum hæmorrhage.

Dr. CRAIG mentioned that Dr. Stephen Wilson had performed experiments on himself with various ergotised grains without any bad results.

Dr. MATTHEWS DUNCAN had used ergot a great deal. His opinion as to its effects differed from that of many of the Fellows. He thought its action was very variable, and that we really knew very little about it. It seemed to him a remarkable proof of our ignorance of the action of this remedy, that it was recommended as of service in stopping abortion. Although not objecting to Dr. Cuthill's reference to its "energetic effects," he must say he had ever failed to see them. In his experience the effect was never sufficiently energetic. He referred to a hospital case, in which good results were believed to have been produced by the subcutaneous use of ergot. In this case he varied the injection by using simple water, without the patient's knowledge, and with equal benefit. In menorrhagia he thought ergot serviceable. He had not known ergot to produce abortion. He had not used it to prevent abortion, as in such circumstances he considered its use neither logical nor correct. If it had any action in abortion it would be to favour it. He had used it in inducing premature labour without effect. As to its use in labour at the full time, he had not found, nor did he believe, that it increased the pains,

although it might in another way hasten the birth of the child. It was most useful in controlling hæmorrhage; and in confirmation of the views he had expressed he referred to the researches of Schatz with the toco-dynamometer. Although ergot did not increase the pains, it did tend to produce permanent or tonic uterine contraction, and in this way might hasten the birth of the child, but in an injurious manner. It destroyed the intermissions between the pains, and thus produced what we wanted to avoid. The real value of the remedy was in the third stage of labour, when it assisted in keeping up uterine contraction. In fibrous tumours he would not expect benefit from its use, except as a result of increased tonic uterine action. As to the analogy between the bloodvessels and the uterus in regard to the action of ergot, he believed there was close resemblance.

Dr. CRAIG, in reference to the use of ergot in threatened abortions, stated that Dr. Duncan not having tried the drug in such cases, his (Dr. D.'s) statement was a mere matter of opinion. As Dr. Duncan had said, it was useful in bleeding, and he had not known ergot to produce abortion, and there being bleeding in early abortion, he thought it would be found of service in these cases. This was but the "logical" conclusion from Dr. Duncan's own statement regarding ergot.

Dr. BRUCE had begun practice with the idea that ergot had great power in increasing the strength and frequency of the pains during labour, but after a prolonged trial he had been so frequently disappointed with the result that he seldom used it for such a purpose now, although it was undoubtedly a very valuable remedy in the third stage, and as a preventative of hæmorrhage by inducing tonic contraction of the uterus.

Dr. FARQUHARSON mentioned that in a herd of cows as many as twenty of them had calved about the same time from eating ergotised grass.

Dr. DUNCAN thought if this were caused by ergot, such results ought to occur in all countries when the grasses were much affected with ergot.

Dr. KEILLER asked what Dr. Duncan meant by saying that ergot did not increase the pains, and yet produced permanent contraction? The present point of inquiry was, Whether or not ergot induced contractions of the uterus in the early periods of pregnancy? The influence of ergot of rye in more permanently contracting an already contracting uterus could scarcely be questioned.

Dr. DUNCAN replied that distinction must be made between permanent contraction and ordinary spasmodic contraction; the temporary pressure of a pain and the constant pressure of permanent contraction.

Dr. CUTHILL, in reply, said that while he could not undertake to reply to all the questions started in the discussion, he would like to express the opinion, that during labour ergot increased uterine contraction. He mentioned a case in which, during labour, he gave

ergot ; one single strong tetanic pain was set up, lasting some time, ultimately expelling the child. As to the *modus operandi* of the drug, he could only judge of that in a secondary way, as it was impossible to have ocular demonstration of it. Granted, however, that its action was such as he had stated, it was easy to account for all the phenomena with which it was credited. In acting as a hæmostatic, he did not think it did so chemically, in the same manner as perchloride of iron, but in some other way.

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*Case of Triplets, Complicated with Puerperal Convulsions after Delivery.*

By Dr. W. A. FINLAY.

The patient, Mrs. C., a primipara, aged twenty-five years, had been married ten calendar months previous to her confinement. She is a native of the fishing village of Kiess, in the north of Scotland. Her husband is also a native of the north of Scotland, and is twenty-nine years of age. The patient's friends informed me that during the last two months of pregnancy she had suffered from swellings of the legs and lower eyelids. At the time of her confinement there was great œdema of both lower extremities. I was called to see her on the night of the 18th of September, 1876, and on arriving at 10.15 o'clock I found that a living child, a male, had been born a quarter of an hour before my arrival. The midwife in attendance stated that the presentation and birth of this child were normal. The labour had commenced at 1 P.M., so that she had been nine hours in labour when the first child was born. On examination I found the breech of a second child presenting, the bag of membranes being still unruptured. Uterine action was slow in returning, and the pains were of short duration. Having given two doses (ʒj each dose) of liquid extract of ergot, I ruptured the membranes, and after a few pains the child was expelled as far as the umbilicus. I then extracted the child (a female), which was dead, and had evidently been so for some time. It was at 1 A.M., three hours after the birth of the first child, that the second one was born. In about ten minutes after this there was a slight return of uterine action, not greater than that which usually occurs for the expulsion of the placenta. I then examined and felt the breech of a third child presenting. The bag of membranes was entire, and I ruptured it at once, and brought down the feet and extracted the child, which was a female, and stillborn, like its immediate predecessor. It was born at 1.30, half an hour after the birth of the second child. After this the uterus, excited by external manipulation, soon expelled the placental mass, which was all in one. The umbilical cords of the first two children were inserted within two inches of each other, near the lower border of the placenta, and the cord of the third child was inserted at a considerable distance higher up. Each child had a separate and distinct bag of membranes to

itself. After complete delivery the patient's pulse, which had been full, became weak, and fell to 60 beats per minute. An ounce of whisky having been given, and the binder firmly applied, the state of the pulse improved.

	lbs.	oz.
The first child, a male, weighed	5	12
Second „ female, „	3	8
Third „ female, „	2	12
<hr/>		
Total weight	12	0

The male child is well and thriving, and up to this date has given no sign of being particularly weak.

The second and third children were perfectly formed, although they were small. They had been dead for some time before birth. In the last the skin of the abdomen was discoloured, but in neither of them was there any peeling of the cuticle.

The mother was restless for some hours after delivery. Next morning at my visit she said she felt well, but her face was puffy and of a bluish colour, and she had passed urine involuntarily. About four o'clock on the 19th (about 14 hours after delivery) she had a violent convulsion fit, which lasted for ten minutes. This fit had ceased before my arrival, but the patient was dull and listless, and her tongue was cut, having been bitten during the convulsions. A fly blister was applied to the nape of the neck, and ice to the forehead. (Between this visit and my next one I mentioned the case to Dr. Underhill, and we agreed that chloral was the best drug to prescribe.) At 7 P.M. I found that during the previous three hours she had had four fits, varying from 10 to 20 minutes in duration. The discharge of blood during the day from the uterus had been free, and I suppose that this had been of benefit. I prescribed 30 grains of chloral hydrate, which she took in one draught. After taking it she had one more fit, and then slept quietly for rather more than an hour. When she awoke the fits returned, and continued from 9 P.M. till 2 next morning. At 10 o'clock I saw her in a state of complete coma, with violent convulsions. In the early morning the swelling of the lower extremities began to diminish, and there was a profuse watery discharge from the vagina. This watery discharge was very marked, and continued for several days. During the whole day (20th) she was in an unconscious condition, but occasionally she swallowed a little beef-tea unconsciously. She had passed no urine, except involuntarily, and in the evening I drew off by catheter three ounces of urine, which was all that the bladder contained. On being tested the urine was found to be highly albuminous, and its specific gravity 1023. She was then conscious to a slight extent. The pupils contracted when a lighted taper was held near them.

On the morning of the 21st I found that she had passed a good night, having slept several hours. She seemed to recognise her



friends, and, although much confused in mind, she was certainly better. The following mixture was prescribed :—

R. Potass acetat., ℥ss.  
Syrupi limonis, ℥ss.  
Aquæ puræ, ad ℥viij.  
One tablespoonful every four hours.

From that time the patient gradually improved. The œdema of the face and lower extremities diminished. Profuse diarrhœa set in, and seemed to be of much benefit to the patient. From time to time I tested the urine, and found that it still was albuminous. The last time I examined it was about five weeks after delivery.

The patient's friends say that she has not been rendered more stupid by the convulsions, but she now seems to be as intelligent as she was before her confinement.

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*Meeting, February 14th.*

The following note on a peculiar form of Vaginal Hernia, by Dr. MATTHEW DUNCAN, was read by Dr. UNDERHILL :—

Mrs. G., who occupied a bed in my ward in the Royal Infirmary, had an ovarian cyst which had long been burst, and had discharged so copious an amount of very viscid clear jelly as to distend her abdomen extremely. An attempt had been made to draw it off, but in vain, on account of its viscosity. In the latter weeks of her life a rounded firm tumour protruded partially from the vagina, sometimes more, sometimes less. It was regarded by the nurse as a falling of the womb. In consequence of her great general illness, and there being no complaint of this tumour, it was not carefully examined during life. At the post-mortem investigation made by Dr. Wyllie it was found to be a hernia of Douglas's space. At the bottom of the recto-vaginal pouch was an opening admitting two fingers, which established communication with the hernial sac between the rectum and the vagina, and protruding into the latter. The sac was larger than a hen's egg, or about equal to a common apple. It was full of dense jelly, which adhered to its peritoneal surface.

Professor SIMPSON had a patient, at present in the Infirmary, suffering from uterine tumour with ascites, in whom there was a bulging into the vagina, in which the fluid could be felt.

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*Note of a Case of Painless Second Stage of Labour in a Primipara.*

By Dr. C. E. UNDERHILL.

M. H., aged sixteen years and a few days ; unmarried, primipara ; a poor, small, ill-developed girl, physically and mentally, menstruated last in the middle of September, 1874, and fell in labour on 15th June, 1875. I was called to her at 3 A.M., 16th June. The os was then

about half dilated, membranes entire, head presenting in first position of Nægele, pains frequent, occurring about every seven or eight minutes, and severe. She bore them badly, crying and uttering great expressions of suffering, as each pain came on. This continued until about 6 A.M., when the waters broke, and I was shortly afterwards struck by the fact that she gave no more indications of suffering, and indeed kept quite quiet. Thinking that the labour pains had left her, I asked if she had no pain, and she said, None. While standing by the bed, I noticed the drawing up together of the body, and the holding of the breath, characteristic of the expulsive pains of the second stage of labour; and with a hand on the uterus, I felt active contraction going on, followed shortly by relaxation. This occurred again and again, and each time in answer to my question, she declared that she felt no pain. Meanwhile the head was slowly advancing and distending the vagina and perineum, the pains succeeding one another with the ordinary rapidity and duration of a tolerably severe first labour; still the patient stated that she did not feel any pain, and I am convinced that she did not, except just as the head was being born, when she uttered some exclamations of distress. She did not appear to suffer at all from the time when the waters broke, and the second stage of labour began, until the birth of the child—a period of nearly three hours. The child was a living female of average size; the fourchette was untorn. I was called away shortly after it was born, and was told by the friends that soon after I left the patient had a fainting fit. She was quite conscious and wide awake throughout the latter part of the labour. She made a good recovery.

*Remarks.*—The circumstance in this case to which I wish to draw attention is the complete absence of pain during the expulsive stage of labour, lasting more than two hours, in a person who had complained of great suffering during the earlier part of the process, and who was naturally of a complaining character and deficient in self-control. That the whole process of labour may take place with little or no pain, even in primiparæ, is well known; but these cases are generally rapid and easy. Indeed, Dr. Montgomery relates an instance in which a young primiparous woman was delivered by herself while she was sleeping naturally and soundly. He says:—"In March, 1848, I attended a lady between nineteen and twenty years of age in her first confinement; her pains, which lasted altogether about six hours, were all through sharp and trying; as the labour drew towards its close she suffered less distress, and slept soundly at intervals between the expulsive efforts, as is very usual at such a time; but about five minutes before the birth of her child she fell into a deep sleep, and did not waken until after I had divided the funis . . . . I was standing by her all the time, and can therefore state with certainty that she took no anodyne or anæsthetic of any kind."\*

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\* "Signs and Symptoms of Pregnancy," 2nd edit., 1863, p. 608.

He looks upon this as a remarkable case.

Here, as in my case, the pains in the earlier part of the labour were severe, while the period of comparative immunity was apparently only at the very end of the process. The same authority quotes cases in which pregnant women, who had previously borne several children, were awakened out of sleep to find to their astonishment that their children had been born without their being conscious of the occurrence of the labour. In another paper he says :—" I have met with but one instance of a woman who bore children without pain. That lady had eight children, and she never gave birth to one of them without being in the most imminent danger of losing her life from hæmorrhage."\* In all these cases the labours are stated to have been very quick. Dr. Protheroe Smith relates a case which he once witnessed of painless labour unaided by artificial means. The subject of it was a young lady, a primipara ; and during the dilatation of the os, the passage of the child through the pelvis and soft parts, the distension of the perineum, and the final expulsion of the contents of the uterus, there was not only no complaint, but in answer to his repeated inquiry whether she did not suffer, she as often assured him that she felt no pain. The patient was in good health at the time, nor could any peculiarity of constitution or condition be detected, which would satisfactorily account for her immunity from the ordinary sorrows of childbirth. A similar case had been related to him by Mr. H. Callaway.†

I do not think such cases are common, and I bring this one forward merely for the purpose of recording it. I can offer no explanation of this freedom from pain during a long and tedious second stage.

Dr. JAMES CARMICHAEL mentioned a case of completely painless second stage in a multiparous weakly patient who was the subject of heart disease. The contractions were very powerful, but the patient was not conscious of any pain.

Dr. RATTRAY generally found that patients during labour suffered less in the second than in the first stage. Pain was saved by keeping the membranes entire as long as possible.

Dr. GORDON also thought the first stage the more painful ; the second was rather an expulsive effort.

Dr. SIMPSON considered that, in the first stage, the pain was more of a worrying nature, and the patient, being less conscious of progress, complained more ; in the second stage, the patient being more conscious of progress, tolerated the pain better. He thought that in these cases of painless labour there was probably some peculiar condition of the sensory nervous system. It was still an undecided question as to the exact site of the pain. Madame Boivin considered

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\* "Dublin Medical Journal," 1849, p. 332.

† "Scriptural Authority for the Mitigation of the Pains of Labour by Chloroform." By Protheroe Smith, M.D. London, 1848, p. 33.

it was in the neck of the womb; most observers now thought it was in the uterus itself. He had met with a case in which the labour was entirely painless; the woman was supposed to be the subject of ovarian dropsy. On examination, a bag of membranes was found protruding, and painless labour in progress. Professor von Ritgen, of Giessen, in conversing with him on this subject, had mentioned that he had met with seventeen cases of painless labour.

Dr. YOUNG expressed the opinion that some patients were much more tolerant of pain than others.

Dr. WILSON had never met with a case of painless labour. He could not agree with Dr. Gordon and others that the second stage was so painless as they had stated.

Dr. UNDERHILL, in replying, stated that he was at a loss to account for the absence of pain in the second stage in this case, as during the first stage the suffering had been acute. He could not agree with Dr. Gordon and other Fellows as to the frequent painlessness of the second stage. With reference to what the President had stated as to the probability of there being some peculiar condition of the nervous system in these cases, he might mention that, after labour, this patient had had a peculiar fainting fit. On one occasion he had attended a lady who was suffering from diphtheria, and in whose case it was necessary to perform tracheotomy; the labour came on soon after the operation and was almost or altogether painless.

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*Meeting, Wednesday, February 28th.*

Dr. CRAIG showed an entire ovum, about a fortnight old, which he had found in a blood clot from the vagina, in a case of abortion. Professor Turner had examined the preparation, and pronounced it to be an ovum probably about twelve days old. The preparation was preserved in Müller's fluid.

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*On the Condition of the Cervix Uteri in the Latter Months of Utero-Gestation: with a Specimen.*

By ANGUS MACDONALD, M.D.

Writers on diseases of the skin are occasionally wont to state that diseased conditions of the cutaneous system being exposed to the critical eye of the physician ought, of all affections, to be best and most widely known, and yet it is rather the rule to find a lamentable want of knowledge regarding them in the general medical mind. In imitation of these authors, we might say that the cervix being that part of the uterus most readily approachable both for diagnostic and therapeutic purposes, obstetricians ought to be specially well acquainted with its anatomy, physiology, pathology, and therapeutics. But is it not the fact that fully as much uncertainty pervades the



profession regarding the cervix as regarding the body of the uterus? How painfully frequent are totally contradictory views inculcated by authorities of equal eminence regarding its diseases and their treatment, and how often are its functions confounded with those of the lower uterine segment, and *vice versa*!

However, in the present paper I do not mean to go into considerations of this kind, but merely to restrict myself to a single point, viz., the behaviour of the cervix during the latter months of utero-gestation.

I need hardly say that, up to the time of Weitbrecht, 1750, it was universally held that the cervix uteri during pregnancy underwent a gradual amount of shortening, which was believed to be so closely correlated to the period of the pregnancy that the shortening of the organ might be taken as a symptom of the period of the pregnancy. It was believed, indeed, that during the early part of pregnancy the body alone was concerned in forming a receptacle for the fœtus, but that as pregnancy advanced the cervix at its upper part became gradually used up, and was made to contribute successive portions to the amplification of the lower segment of the gravid uterus, until about the natural time for the onset of labour nothing remained of the original cervical cavity except a ring forming the outer os.

The description given by Weitbrecht of a uterus in the eighth month of pregnancy, however, ought to have been sufficient to settle the matter. But, like much other good work, his observations were soon forgotten. Stolz and Caseaux, from observations upon living women near the time of labour, again directed attention to this subject, after the oblivion into which it had unworthily fallen. But it is Duncan\* to whom the merit of really resuscitating the true views in modern times is due. In his masterly paper on this subject he gathers together the earlier views scattered through works too seldom consulted now-a-days, and furnishes drawings of several dissections from earlier authors, such as Roederer, to which he adds several from dissections made by himself. These drawings from Roederer and John Hunter are especially valuable, as they were correctly made by the authors according to what they found in nature, and are dead against their own defective theoretical ideas.

The views promulgated by Duncan in this country and supported by Müller in Germany may be said to have almost attained to absolute acceptance on the Continent and to very general currency here. The advantage in the position taken by him is that it rests not on theory, but on anatomical fact. One fact is surely worth more than a very large amount of theory. And yet it is astonishing how difficult it is for the honestest and best observers to get rid of the slavery of preconceived conceptions, and away from the feeling that their plans are so much better than what is said to be found in nature,

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\* "Researches in Obstetrics," p. 243.

that the latter must be interpreted and explained away so as to bring it into agreement with their fancies.

It is accordingly rather disappointing to find an author of such deservedly great reputation as Bandl striving to return to the antiquated notion that the cervix uteri is used up in the latter months of pregnancy to aid in forming the lower uterine segment. Bandl's notion is difficult to appreciate, but seems to me to be an attempt to reconcile the old mistakes with modern facts. I have not been able as yet to get the paper he published last year on the subject, but the following is a translation of that part of his communication to the gynæcological section of the Association of German Natural Philosophers, held at Hamburg last year, so far as it bears upon the subject under discussion at present. Bandl is describing the dissection of the uterus of a woman who died in the eighth lunar month, upon whose body Cæsarean section had been performed. "The mucous membrane canal (of cervix) remains 2-4 centimetres long, with its surrounding tissues intact, as Müller has described it, up to the initiative pains, often also even many hours during the labour. Outside and above this canal there is formed, indeed, towards the end of pregnancy, out of the lower part of the uterus and the muscular walls of the cervix, and also partially out of the upper portions of the vagina, under continuous growth and exalted activity of the parts, *an entirely new cervix*, and the small still existing canal, with its internal os, plays in the matter a quite subordinate part. It is this new cervix which the table of Braune shows—viz., the variously described but still undefined lower uterine segment of the older obstetricians. This new cervix has a line of separation from the body of the uterus, which is distinctly to be felt, lying chiefly at the inlet of the pelvis. This line of separation corresponds to the second uterine os, as described by many authors, and the latter is only identical with the os internum of Braune's table, identical with the os internum, which one feels a handbreath above the os externum, when one passes it into the cavity of the uterus to perform version or to separate the placenta."

It is satisfactory to find that these erratic views did not find a single supporter at the meeting, but, on the other hand, met with unqualified opposition from every gynæcologist present.

It is worthy of notice that Bandl finds the original cervix persistent in his cases, but, having taken up the theoretical notion that the tissue of the cervix as we find it in the latter period of utero-gestation is too small in quantity to be dilated into the cervical zone of the genital passage, as we find it, after the cervix is completely opened up, he feels himself constrained to hypothesise the airy structure, an account of which I have translated for you.

But that views of an extremely indefinite character are held by justly distinguished members of our profession at home on this subject, is evidenced by the note on this point added by M'Clintock\*

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\* "Smellie's Midwifery." Edited by M'Clintock, vol. i. p. 187.

to his edition of Smellie, just published. According to this note, one is inclined to believe that he holds the condition of the cervix during the latter months of pregnancy to be still undetermined, and thinks that the most valuable contribution to its solution is a dissection described by Dr. Arthur Farre, in the "Cyclopædia of Anatomy and Physiology," where there would appear to have existed, so far as I can gather, a cervix abnormally relaxed, if not already partially developed, in a phthisical subject. It is not stated, however, whether there had been pains set agoing by the dyspnœa, which, we may suppose, preceded death in such a case, though we know that under such circumstances labour pains are apt to be set up. Before weight could be placed in such a recorded case, every particular would need to be known respecting the death. In this case the cervix seems to have been opened up at the inner os and throughout its cavity, so as to form an oblong spheroid, and to permit the head to rest upon the outer os.

Now it so happens that, about a year ago, one of my dispensary pupils was called to attend a patient in High Street, who believed herself actually in labour at full term. He saw her in the evening he was sent for, and found no pains present, and that she was mistaken in believing her labour had begun. On the forenoon of the following day, on sitting up in bed, she suddenly died. I insisted on a sectio, and with some difficulty procured the consent of her husband to the removal of the entire uterus with its contained ovum. The post-mortem examination was performed for me by Dr. Wyllie, and the uterus was injected by Professor Turner from both the uterine and foetal vessels. One-half of this uterus is now laid before you. It is to be noted that the patient was forty years old, and that she had given birth thirteen times previously; that she supposed herself arrived at the full term of pregnancy, and, indeed, in labour, so that she must at least have been past the middle of the ninth month, and that the uterine organs were in a condition of absolute health. There was found no apparent cause of death on the sectio, except it had been sudden syncope from a somewhat large, pale, and friable heart. In this case, therefore, no question of the effects of disease can be raised.

At the examination it was noted by Dr. Duncan, who was also present, that the cervix was undeveloped, and the inner os allowed two fingers to pass. I leave the members of the Society to judge whether there is any evidence here either of the obliteration of the original cervix, or of the formation of a new cervix, such as Bandl would make us believe, or of a squashing down of the cervix by an opening out of the upper part of it, as Farre and M'Clintock would seem to believe in. Bandl's line of demarcation between his new cervix and the body of the uterus is conspicuous only by its absence. It will be noted that the mucous membrane of the cervical cavity is still exactly as it had been throughout the pregnancy. The *arbor vitæ* arrangement is still seen, and the line of demarcation between



the decidua and the cervical mucous membrane is as perfect as it could have been at any time during the pregnancy. The membranes have been raised by Mr. Turner from the mucous membrane for a little space upwards from the line of junction between the cervical mucous membrane and that of the body merely to show the decidua, but they were originally found intact and attached down to the very edge of the inner os. The length of the cavity of the cervix is, at its longest part, where the lips project most,  $1\frac{1}{2}$  inch; at the junction of the one lip with the other it measures only  $1\frac{1}{4}$  inch. The thickness of the cervical tissues amounts to seven-sixteenths of an inch, which is decidedly greater than that of the body of the uterus, which measures only a quarter of an inch in thickness. Of course the dimensions are no doubt lessened in all directions by the preparation being kept in spirit for a considerable time.

I have further to observe, that the vaginal portion of the cervix is still markedly persistent, and that the thickness of the cervical wall, with the unused cervical portion, lend a considerable probability to the conviction, if that were needed, that Bandl's fears about want of tissue out of which to form the cervical segment of the fully dilated genital passage are groundless.

I have thus laid before the Society this very interesting and rare specimen, and do not mean to enlarge further on the subject than to state that it seems to me to put beyond a doubt that, under ordinary circumstances, the cervix uteri neither shortens nor has its cavity obliterated during pregnancy. On the other hand, it manifestly shows that the cervix, while partaking of the general hypertrophy of the genital organs during pregnancy, maintains its general shape intact till very near the termination of pregnancy. It also lends no support to, or rather flatly contradicts, the idea of Bandl, that there is a new cervix developed above the real cervix during the latter months of pregnancy. I confess myself quite at a loss to comprehend the notion of using up the cervical tissue to amplify the lower segment, whilst the mucous membrane of its cavity remains intact, as put forward by Bandl and others. My difficulty is more especially great, as in my case the tissues of the cervix, instead of being less large, are seen to be fully as large as one could have expected to find them. This view seems very much on a par with the now exploded chemical theory, that heat was the principle of lightness; for here we find the cervix lose tissue and yet get larger. But, as in the chemical case, when the process of oxidation became better understood, the lightness theory collapsed; so I rather fear that under the progress of anatomical observations, Bandl's and all similar theories must likewise ultimately disappear. Nor does this specimen support the views of Farre and M'Clintock, that there is an opening up of the cavity of the cervix, and a flattening out of the organ in the latter months of pregnancy.

There is a further question that is not touched so directly by the condition of the specimen before us, although it is raised by the con-



sideration of it—viz., At what period during pregnancy does the cervix uteri begin to be developed or opened up? It is usually stated that this takes place within the last fortnight or ten days of pregnancy. But the observations regarding the process have hitherto been rather defective.

It is, of course, difficult to obtain satisfactory observations. Those of Stolz and Caseaux are undoubtedly among the best. Caseaux, "Traité de l'Art des Accouchements, 1853," page 106, says, in speaking of the common belief of the cervix being gradually used up to amplify the lower uterine segment in the latter months of pregnancy, "There is here, I fear not to say, a complete mistake, pointed out, however, since 1826 by M. Stolz, and to which I have myself never ceased to call attention since 1839. No, the neck is not shortened, as has been so long maintained, it preserves its entire length up to the last fortnight of pregnancy, and it is easy, above all in women who have already borne children, to prove this, as we shall show further on. But in the last weeks its length, hitherto intact, diminishes very rapidly, ends even by complete obliteration, and we shall tell soon what is the very simple mechanism of the disappearance of the cervix some days before labour."

What Caseaux refers to is the silent contractions which take place usually for a week or ten days before the onset of labour-pains (see his footnote, page 413, *ibid.*). But, though the statements of Stolz and Caseaux are, on the whole, correct, the evidence on which their opinions rest is very unsatisfactory, as it is derived from examinations of the soft and yielding cervix near or at the onset of labour, when the tissues are so soft and yielding that it is difficult to measure them accurately. Indeed it would appear that Stolz and Caseaux were both led thus into the error of predicating too frequently a barrel or spindle shaped cervical cavity in the latter months, a condition that no doubt at times exists, but the frequency of which they have, I think, greatly exaggerated. It is easy to make such a shape of the cervical cavity appear to exist owing to the mere act of examination approximating the outer to the inner os.

It is accordingly with considerable satisfaction that I have read the recent contributions of such an able and accurate observer as Litzmann\* on this point; and I cannot help summarising and commenting on his researches on the matter as a conclusion to this paper. We have long known that the cervix was prepared for dilatation by natural softening and succulency, due partly to its sharing in the general hyperæmia of the genital organs near the termination of pregnancy, and partly also to the venous stasis occasioned by the pressure of the presenting part upon the lower uterine segment against the pelvic inlet. But on this condition of preparation we have super-added active stretching of the canal of the cervix near the termination of pregnancy, due chiefly to what are called silent contractions, these

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\* "Archiv für Gynäkologie," Bd x. s. 118.

being usually painless rhythmical contractions of the uterus occurring within an indefinite period before the onset of what is usually called labour—*i.e.*, when the pains become so severe as to attract the patient's attention to them.

When this process of opening up of the cervix begins, is, however, as a matter of exactly proved science, as yet far from ascertained, notwithstanding strong assertions similar to these I have recorded from Stolz and Caseaux, and notwithstanding also that it is a general conviction in the professional mind.

Litzmann observes that the cervix uteri at the inner os tends to be dilated from two causes during the latter months of pregnancy: First, the ovum continuing to grow after the uterus has ceased to develop new muscular fibres—*i. e.*, after the seventh month of pregnancy, produces consequently stretching of the whole uterine cavity, and greater tension in its walls; second, more especially is this the effect of the contractions that occur most often without pain during the same months. These changes have for their effects the production of a horizontal strain upon the inner os, by which it is made to open up, and also the displacement downwards of the apex of the ovoid formed by the ovum, so as to tend in the same direction, and to push open the os. If the latter effect now occurs in any considerable degree, as there must be displacement downwards of the apex of the ovum, and at the same time displacement upwards of the part of the lower segment of the uterus adjoining the inner os, there must arise straining of the membranes along the line of attachment, and separation of them from the surface of the body, for a variable portion around the inner os.

If now the cavity of the cervix is traversable to the examining finger, we ought to have, in the attachment or separation of the membranes in the neighbourhood of the inner os, a means of testing our observations as to whether the inner os is partially opened up, or still intact. If we find the membranes running down in their attachment to the line which, to the examining finger is indicated as the upper limit of the cervix, then we should be certain that the inner os is still intact, and we are in a position to measure the length of its cavity with more or less accuracy. Again, if the membranes are found separated to more or less extent around what seems to be the upper limit of the entire cervix, we are certain that the cervix is more or less already developed, and that a portion of its cavity is wanting.

The outer os, again, may and does dilate independently of these active forces, and in consequence mainly of the strain upon its edges produced by the weight of the uterus acting through its vaginal and pelvic attachments.

The opening up and dilatation of the cervical canal thus results in the latter months of pregnancy in a twofold direction from the outer os as well as from the inner os. It is also observed by Litzmann that the tension of the walls of the uterus attains in primiparæ in the two last months of pregnancy a higher degree, on an average, than in

multiparæ, and that contractions in the former are more frequent, and probably begin earlier than in the latter.

The outer os remains shut, or is only slightly opened; is, at all events, not traversable to the finger, specially in primiparæ, in contradistinction to multiparæ, not only more frequently, but also up to a later period of the pregnancy. In Litzmann's protocols, this condition is noted in primiparæ up to the 36th week of pregnancy in the preponderating majority, from the 36th to the 39th week in an average of two-thirds, in the 38th week even in two-fifths, and in the 40th week in nearly one-third of all the cases. In multiparæ, on the other hand, it never was observed after the 38th week—even in the 37th and 38th week only seldom, scarcely in the eighth part of the cases; before this period somewhat more frequently, perhaps in one-fourth of the few observations made.

The opening up and unfolding of the cervical canal upwards from the external os occurs in multiparæ more frequently and at an earlier period than in primiparæ.

In the latter it was never observed before the 34th week of pregnancy; very seldom, and only exceptionally, in the 34th and 35th weeks; from the 36th to the 39th in fully one-fifth of the cases; after this period, in proportion as the complete traversability became more frequent, again in diminishing frequency.

In multiparæ, on the other hand, the outer os was found from the 33rd week invariably very much more frequently opened than shut; from the 36th to the 39th week this relation, in comparison with the complete traversability of the canal, formed still the rule, until from this time onwards the latter becoming more and more frequent obtained the preponderance.

Complete traversability of the cervical canal occurs in general likewise more frequently in multiparæ than in primiparæ; in both, however, not before the 36th week of the pregnancy.

But whilst in primiparæ it was observed from the 36th to the 39th week only quite rarely and in occasional cases, in the 39th week in perhaps two-fifths, and in the 40th week in not quite two-thirds of the cases, it was found in multiparæ from the 36th week up to the 39th in somewhat more than one-third of the cases, in the 39th week in probably three-fourths of the cases, and in the 40th week almost without exception. This condition presupposes always a considerable softening of the cervix throughout its entire length.

But the part to which I specially want to draw the attention of the Society at present, as it bears most directly on the subject in hand, and is merely led up to by these observations I have translated and summarised, are the following analyses of 81 observations on women whose cervixes were completely traversable to the examining finger.

These included 35 observations in primiparæ and 46 in multiparæ, which are kept separate in the analysis.

Of the 35 observations in primiparæ, Litzmann found 9 in which the uniform narrowness of the cervical cavity, or its contraction at its

upper part, prevented the examining finger from detecting whether around the internal os the ovum was separated or not.

Of these observations, 1 was made in the 36th week,

1	„	„	38th	„
6	„	„	39th	„
and 1	„	„	40th	„

The length of the cervical canal varied from  $\frac{6}{8}$ ths to  $1\frac{5}{8}$ ths inch.

In 5 other cases the apex of the ovum was scarcely observably separated, or, at most, for a very small distance along the circumference of the internal os. These observations were made:—

2 in the 39th week,  
and 3 „ 40th „

In one of them the cervical canal measured about 2 inches. In the rest, however, its extent did not exceed  $\frac{6}{8}$ ths to  $1\frac{1}{8}$ th inch.

In 21 cases the membranes were found already separated to a pretty considerable extent. These observations were made:—

1	in the 36th week,
1	„ 38th „
2	„ 39th „
and 17	„ 40th „

and all before the onset of distinct labour-pains.

The cervical canal was, as a rule, markedly shortened. Only in some few cases did it have still a length of  $1\frac{1}{8}$ th to  $1\frac{5}{8}$ ths inch. It mostly measured not over  $\frac{1}{2}$ th to  $\frac{2}{3}$ ths inch. The less of the cervix that was developed, the more marked was the line of division to be felt between the undeveloped and the developed portions of its cavity. In some instances the cervical wall at that line projected inwards at an acute angle. Conversely, the more completely the cervical cavity was opened up, the less pronounced was the line of demarcation found.

Among the 46 observations on multiparæ, in 5 only was the narrowness of the canal a hindrance to the ascertainment of whether the apex of the ovum was separated from, or adherent to, the uterine surface adjoining the inner os. These were made:—

1	in the 37th week,
1	„ 38th „
2	„ 39th „
and 1	„ 40th „

In 23 cases the apex of the ovum was either not at all, or only in the immediate neighbourhood of the inner os, separated from the uterus. These cases were examined:—

1	in the 36th week of the pregnancy,		
2	„ 37th	„	„
5	„ 38th	„	„
4	„ 39th	„	„
and 11	„ 40th	„	„



Only in one case did the cervical canal appear shorter than usual. In all the rest it was found over  $\frac{5}{8}$ ths to  $1\frac{1}{2}$  inch, and even up to 2 inches.

Lastly, in 18 cases the membranes were found separated to a considerable extent from the uterus. These observations were made:—

1 in the 37th week of the pregnancy,				
1	„	38th	„	„
4	„	39th	„	„
12	„	40th	„	„

The cervical canal in these cases was often  $\frac{5}{8}$ ths to  $1\frac{3}{16}$ ths inch in length, but it was frequently much shortened.

It is difficult to over-estimate the value of such observations in settling the question with which we started. Much credit is due to Litzmann for suggesting the importance of the degree of closeness of the attachment of the membranes around the inner os as a means to establish the commencement or not of development of the cervix at its upper extremity.

Of course individual differences, both as to length of the cervix and its consistence, still introduce numerous sources of error. But, nevertheless, those who are fortunate enough to hold appointments in a Maternity Hospital ought to get over them by care and time, so as to be able to arrive at tolerably correct averages in regard to the period of onset of the opening up of the cervical cavity from within.

It is all the more important to be able to attain some degree of accuracy in the solution of this problem in the living woman, as it must be a slow process to collect the necessary data from dissection, such as the one now laid before you.

It appears to me sufficiently proved from Litzmann's observations that the cervix uteri at its upper pole is earlier interfered with in primiparæ than in multiparæ, and that this consequence is the resultant of two factors: being due, first, to the greater tension of the uterine walls; second, to the earlier onset and more frequent occurrence of the silent contractions. It is found by Litzmann that the apparent feeling of the upper limit of the cervix is very untrustworthy, as it may correspond either to the upper limit of the true cervix, or of only its undeveloped portion. Likewise that although in a small proportion of cases it would appear that development of the cervix at its upper pole begins as early as the 36th week in primiparæ, it seems at least a week later before this ever occurs in multiparæ; and that it is very much more common in both classes of cases to find the cervix practically intact even in the 40th week.

But let us proceed to scan these figures a little more closely. We are, I think, fairly entitled to hold that those cases, in which Litzmann failed from narrowness of the cervix to ascertain whether there was separation of the membranes around the inner os or not, were in all probability cases in which the cervix was still intact. And those amounted to 14 out of the 81 cases, 9 being primiparous and 5

multiparous, 1 being observed in the 36th week, 1 in the 37th, 2 in the 38th, 8 in the 39th, and 2 in the 40th. Again, in those cases in which, by direct observation, the membranes were proved to be not at all, or only to an extremely small amount, separated around the margin of the inner os, we need no argument to support the practical persistence of the cervix. And these observations included 28 cases out of the 81, 5 being primiparæ and 22 multiparæ. In regard to the period of observation, 1 was made in the 36th week, 2 in the 37th, 5 in the 38th, 6 in the 39th, and 14 in the 40th week of the pregnancy.

If now we put these two sets of cases together, we find that in 42 out of 81 observations made on patients, the cavities of whose cervixes were traversable completely to the examining finger, the inner os was scarcely, if at all, developed during the latter month of utero-gestation, 2 observations being made in the 36th week, 3 in the 37th week, 7 in the 38th week, 14 in the 39th, and the surprising number of 16 in the 40th week of the pregnancy, 14 cases being primiparous, and 28 multiparous. This result shows that in these cases the tendency to persistency of the cervix up to the extreme limit of utero-gestation was distinctly greater in multiparæ than in primiparæ, for of 46 multiparous cases, 28 were not developed at this late period; whilst of 35 primiparous, 14 were not developed, so that the tendency to late development of the cervix at its upper pole is greater in multiparæ than in primiparæ in proportion as  $\frac{28}{46}$  is greater than  $\frac{14}{35}$ , or nearly as two-thirds are greater than two-fifths.

But though this is only in accordance with observations such as I have now the privilege to lay before you, it is quite at variance with such assumptions as Farre and M'Clintock bring forward. For it is exactly in multiparous cases in which there occur that general softness and succulency of the parts, which those authorities wish us to believe is caused by opening up of the inner os during the latter months; and yet those accurate observations prove that in these very cases the cervix is specially slow to develop from the inner pole.

Coming now to the remaining 39 observations, 21 of which embrace primiparæ, and 18 multiparæ, in which the cervix was found at its inner pole more or less completely developed, we notice that 1 observation was made in the 36th week, 1 in the 37th week, 2 in the 38th week, 6 in the 39th week, and the very large number of 29 in the 40th week of the pregnancy. These observations, it is to be noted, were all made before the onset of manifest labour-pains. It will be noticed that of those cases in which the cervix was developed to a considerable amount at the time of examination, there are 21 out of the 35 primiparæ, and only 18 out of the 46 multiparæ, or three-fifths of the one set, and only two-fifths of the other.

We thus notice that in 42 out of 81 observations the inner os was found persistent, or all but so, in 42, whilst it was more or less opened up in 39; and yet all these observations were made within the last month of pregnancy, 14 and 16 of the former class being

made in the 39th and 40th weeks respectively, and 6 and 29 of the latter.

These exact observations therefore bear out in the most complete manner the general statements of those authors who hold that the cervix uteri as a rule retains, so far as its canal is concerned, its complete integrity till ten days or a fortnight before labour. Indeed they seem to go further, and to indicate that in a large proportion of cases the inner os is still undeveloped and the cavity of the cervix not shortened in the 40th week, that is immediately before the onset of labour-pains. They also show that, if we divide those cases in which the cervix is developed more or less completely before the commencement of labour into primiparæ and multiparæ, we should find that about 60 per cent. of the primiparæ had the cervix more or less shortened from above downwards, but only about 40 per cent. of the multiparæ.

It may be objected, perhaps, that I assume too much in claiming that those cases in which the condition of the cervix prevented an accurate opinion being obtained of the presence or absence of separation of the membrane from around the inner os at the time of examination, ought to be classed as cases of persistency of the inner os at the time. Still, though they were divided between the two sets of cases, their relative paucity would not much alter the result.

I am prepared, however, to admit that the number of actual observations are too few to permit of our forming any sweeping inductions. Still they seem to me extremely valuable as leading the way towards obtaining correct data on which to proceed with the solution of this interesting problem.

And, furthermore, it is to me extremely interesting to be able to say that those observations of Litzmann would have warranted us in expecting with great probability that, in this poor woman's case, we should find what anatomical evidence has demonstrated to us—viz., that though she was believed to be at full term, yet the inner os was more likely than not to be in a still undilated condition. When thus deductions from clinical observations are found to be established by anatomical facts in matters of this kind, we find the strongest evidence of the correctness of the clinical method by which the data for the deductions were obtained.

As the result, therefore, of the above observations, and from a consideration of the specimen before us, and of others that have been brought forward, we are entitled to affirm—

That the cavity of the cervix uteri does not shorten during pregnancy, except within the last month, but rather lengthens; and that observations founded on its supposed shortening are entirely erroneous. I do not mean to deny that there is an apparent shortening of the cervix uteri, as ascertained by the examining finger as pregnancy advances. But what I mean to affirm is, that this so-called clinical fact, when tested by accurate observations, whether on the dead body or the living subject, is a complete delusion. The mistake is the



resultant of several concurrent factors, being partly due to varying heights of the pregnant uterus, partly to changes in the bulk and curvatures of the cervix, and particularly to the increasing softness of its tissues, which diminishes the sense of resistance, and thus gives the idea of shortening to the examining finger. Still, it is by no means denied that a certain amount of accuracy in judging of the advance of the pregnancy from the apparent shortening of the cervix in the latter months is attainable. For there is no doubt but such opinion can be thus obtained, and has been obtained, with a considerable amount of certainty. What is argued in this paper, and what every tittle of anatomical evidence that has heretofore been adduced, with the doubtful exception of Farre's dissection, supports to the utmost, is, that the clinical observation is erroneously explained, there being no actual shortening before the last month of utero-gestation at the earliest. The bleeding in placenta prævia is now pretty generally held to be accidental, more especially since the publication of Duncan's extremely able papers upon the subject; whilst the occasional occurrence of absence of bleeding in placenta prævia up to the commencement of labour at full term, is as strong an argument as could be brought forward in favour of the view of persistency in the cervical canal maintained by me. For if the cervix opened up normally within the latter three months, it is clear that all placenta-prævia cases ought to bleed so soon as this process began. But some cases do not do so. The effect of position over the inner os, leaving, as it does, a certain area of the placental surface unsupported, and subject to increased vascular pressure, is more than sufficient to account for the frequency of hæmorrhage in those cases within the latter months without our assuming any opening up of the inner os. As to the argument that my case was an exception to the general rule, I have only to say that all other dissections that have been performed agree with it.

That the cervix at its upper pole remains longer undeveloped in multiparæ than in primiparæ. That there is no foundation, so far as the anatomical evidence furnished by the specimen before us extends, for the widespread delusion that the cervix uteri is used up during the latter months in the amplification of the lower segment of the uterus; and still less for the modern form of this opinion lately adduced by Bandl, that we have the formation of a new cervix during the latter months, which cervix is intermediate between the true cervix and the body of the uterus, and formed of tissues derived from uterus, true cervix, and vagina.

Within the last month the cervix may shorten from above downwards at any period, but rarely does so till the 39th or 40th week, and in a large proportion of cases—from Litzmann's observations probably half of all the cases—not then even, but remains persistent till the labour-pains come on; at any rate, during the 39th and even up to the 40th week.

Dr. GORDON considered that the condition of the parts in cases of



placenta prævia went to prove that the cervix gradually disappeared up to the termination of pregnancy.

Dr. UNDERHILL thought that the Society was indebted to Dr. Macdonald for his interesting communication. He thought that the preparation shown by Dr. Macdonald proved the correctness of the views advanced in the paper with reference to the condition of the cervix in the latter months of pregnancy. There could be no doubt, he thought, that it was now conclusively proved that the cervix was not taken up to form part of the uterine cavity during the latter months of pregnancy. His experience, therefore, was directly the reverse of Dr. Gordon's. Having lately examined several women in the last month of pregnancy, he had found the cervix not at all shortened, and retaining its individuality as distinct from the body of the uterus. In multiparous women he had always found the internal os uteri more patent than in primiparæ. It was practically easy in examining a patient to distinguish between the cervix and the uterus itself, the former having somewhat the feeling of a piece of wet wash-leather; the latter being thick and hard. He had lately seen a case of labour in which the internal os was just beginning to open, yet the cervix was about an inch in length. Delivery was effected about fourteen hours after he had first seen the patient. In this case the cervix had not begun to open up till twenty-four hours before the child was born. The function of the cervix being to transmit the fœtus, was totally different from that of the uterus. He thought, in regard to placenta prævia, that such cases, instead of being considered as opposed to, must be held as proving the point at issue, for, if the old views were correct, every woman with placenta prævia must begin to flood as soon as the cervix began to be taken up to assist in forming the uterine cavity, and must continue to flood until she miscarried or died; whereas this was not the history of cases of placenta prævia; and some occurred in which there was no bleeding at all until the woman was in labour at the full time.

Dr. BRUCE mentioned that he had lately had a case of placenta prævia with no bleeding.

Dr. CRAIG found that in those cases in which the cervix remained developed up to the period of labour the process of parturition was more tedious than in those cases where it had been incorporated with the uterus.

Dr. MACRAE thought that this case of Dr. Macdonald's did not prove the rule, but was quite an exceptional one. He was of opinion that at full term the canal of the cervix became drawn up and incorporated with the uterus, so that, on examination at that time, the fingers simply passed through a foramen, not into a canal.

Professor SIMPSON thought the discussion elicited by the paper proved the interest taken in the question, although some confusion had arisen from the unfamiliar sense in which the word "developed" had been employed in the paper. The preparation shown by Dr. Macdonald demonstrated what in nearly all cases we found shortly before

labour—viz., a well-defined cervix with distinct canal. We must not, however, conclude from the study of such a preparation that there was no change going on in the cervix during pregnancy from which we might draw conclusions as to the date of gestation. When the cervix in this case had lain beside that in a preparation which he lately showed to the Society, from a patient dying of chorea gravidarum in the fifth month, the canal was seen to be distinctly longer. So it would appear, judging from such cases, that the cervix undergoes a progressive shortening from the fifth month up to the full term of pregnancy, at which period, besides being slightly shorter, it becomes soft and contrasts markedly with the thick and hard uterus. In this way we had generally some guide as to the term of pregnancy. He had found that in multiparæ the canal was generally more open and easily traversed than in primiparæ.

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### Obstetric Summary.

#### *Hæmorrhage from the Vaginal Walls after Delivery.*

In the *Progrès Médical* for May 12th, 1877, Dr. Budin records several cases of hæmorrhage from the vaginal walls after delivery, and points out a sign by which such hæmorrhage may be distinguished from that derived from other sources. In the first case, that of a primipara, in which the head presented in the first position, the head had scarcely made its exit, when a considerable quantity of bright blood was seen to flow down at both sides of the child's neck, the shoulders being not yet expelled. The flow of blood continued abundant after the birth of the child, and proved to come from a laceration of the right crus of the clitoris. It was arrested by repeated applications of cold water, followed by pressure for ten minutes. In a second case, also a primipara, with the foetal head in the first position, a large patch of blood was noticed during the expulsion of the body, covering the right shoulder and trunk, and the breech on the same side, but no blood escaped at the sides of the child's neck. A few minutes after delivery blood began to flow from the vagina, and pressure upon the abdomen expelled a quantity of clots. The uterus however was firmly contracted; and the vagina being visually examined before a good light, it was found that there were enormous varices in the anterior vaginal wall, and that one rupture had taken place towards the right side and another towards the left. Ten minutes' pressure by a plug arrested the bleeding on the right side, but on the left some hæmorrhage continued, and further pressure for fifteen minutes was required to stop it finally. In a third case, also a primipara, blood was observed covering the anterior shoulder, side, and breech of the foetus, and the author was led to prophesy that the hæmorrhage would be found to come from the vaginal wall. After a few minutes blood flowed in abundance, the vagina was filled with clots, a ruptured varix was found in the

anterior vaginal wall, as in the preceding case, and was arrested by similar means. The author points out that hæmorrhage from the vulva or vagina may be of serious or fatal consequence, and that it is therefore important, in reference to treatment, to distinguish it from uterine hæmorrhage. He remarks that hæmorrhage from the clitoris appears immediately after the release of the head, and before the expulsion of the shoulder. Hæmorrhage from the cervix would not appear in any quantity till after the expulsion of the trunk, the vagina being distended until that time. But a large patch of blood over the shoulder, side, and breech, indicates hæmorrhage from the anterior vaginal wall: and the author thinks that, taken in conjunction with firm contraction of the uterus, it will be found to be diagnostic of this condition.

### Gynæcic Summary.

#### *The Constitutional Relations of Membranous Dysmenorrhœa.*

Dr. Bordier relates a case of membranous dysmenorrhœa which he regards as dependent upon a dartrous diathesis, and which is of interest in showing the effect of pregnancy in curing a condition generally very little amenable to treatment. The patient was an American, twenty-four years old. Her father was of arthritic constitution, of plethoric aspect, subject to hepatic and renal colic, to gravel, and to muscular rheumatism. In her mother's family there was a history of cancer, tuberculosis, and eczema. She had herself during childhood suffered from long-standing pleurisy on the right side, and was subject to granular angina. She had also suffered from lichen on the neck, and an eruption at the vulva. Menstruation was painful from its first commencement, and obliged her to keep her bed for the first day of the period. It was ascertained that she had from the first been accustomed to pass pieces of membrane, such as were afterwards examined. She married at the age of twenty-one, and soon afterwards had symptoms of tuberculosis of the right lung, accompanied by extreme nervous agitation. After some months of treatment, including the administration of arsenic in large doses, the lung symptoms improved, but the dysmenorrhœa became more severe. It was then discovered that she passed membranes at each period. These formed a more or less complete cast of the uterus. The inner surface was smooth, and showed the orifices of gland-tubes. In a microscopic section the tissue was seen to be composed mainly of large granular fusiform cells. Vessels full of blood were also seen, and glandular culs-de-sac full of fatty granules. On two occasions it was found that the exfoliation took place in successive layers. After the passing of membranes which together made up a complete cast of the uterus, a second exfoliation took place two or three days later, containing a greater proportion of gland tissue, the first layer showing only the orifices.



The patient was seen at this time by Dr. Bernutz, who sent the married couple to drink the waters of Mont-Dore, ordered uterine douches, and recommended pregnancy as the best means of cure. Both parts of the prescription were carried out in a conscientious manner, and the patient became pregnant about three months later. After delivery menstruation became again regular; it was still accompanied by a certain degree of pain, but no more membranes were expelled.

The author regards membranous dysmenorrhœa, in which the membrane passed has the anatomical characters here described, as being a chronic exfoliative endometritis; and he considers that in this instance it was an internal manifestation of the same dartrous diathesis which had produced tuberculosis, pharyngo-bronchitis, lichen of the neck, an indeterminate eruption at the vulva, and neuralgia of the brachial plexus.—*Gazette Hebdomadaire*, January, 26th, 1877.

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#### *The Treatment of Pelvic Effusions by Puncture.*

In the *American Journal of the Medical Sciences* for April, 1877, Professor Brickell, of New Orleans, strongly urges early puncture in cases of pelvic abscess, controverting the advice of Professor Thomas, but supporting that of Dr. Savage and Mr. Spencer Wells. He points out that, if left to Nature, such abscesses very rarely make their way into the vagina, but open either externally in the abdomen, in the thigh, or into the bladder. Protracted suppuration then ensues, and, if the opening is external, since it is situated at the upper part of the abscess, it is impossible to keep its cavity drained, and the pus is liable to burrow extensively in the pelvis. The author relates several cases in which a small quantity of pus was evacuated by means of a trocar, and in which rapid improvement followed. If the presence of pus be revealed by the first use of the trocar, he generally enlarges the opening by means of a sea-tangle tent, and washes out the cavity regularly with carbolic acid.

Professor Brickell's paper deals, however, more particularly with another form of pelvic effusion, namely that in which the fluid is diagnosed as being not purulent but serous, and in this his view is more novel. He contends that early puncture by means of a trocar is quite as desirable in serous as in purulent effusions, and that it is far more efficacious than treatment by absorbents, blisters, hot douches, or other means, in effecting a rapid cure. Five cases are related in which this treatment was adopted, and in which the swelling and inflammatory symptoms rapidly subsided. In one of these, however, a case of long standing, in which, at one point of old thickening, a small purulent collection was found, the inflammation became afterwards rekindled, repeated punctures were required, and the patient eventually sank.



*A Case of Imperforate Hymen.*

Dr. A. Bauer relates a case of imperforate hymen, in which the abnormal condition was not discovered until after marriage. The patient was nineteen years old, had never menstruated, nor suffered any pain which could be attributed to a menstrual nisis. She was married at the end of January, 1876, and a few days after marriage suffered from pains in the back and abdomen accompanied by headache and nausea. This lasted some days and was repeated four weeks later. She came under observation on the 29th of February, but then declined the examination which was proposed. Dr. Bauer was called to her again on the 26th of March. In the meanwhile she had been suffering increasing pains, was unable to walk or stand, and micturition had become frequent and painful.

The abdomen was found to be distended by a movable tumour, somewhat pear-shaped, reaching as high as the umbilicus. It was then discovered that the vaginal orifice was occluded by an imperforate fleshy hymen, the vagina itself distended, bulging at the vulva and into the rectum. The urethra was dilated, and would admit the point of the finger. It was ascertained from the husband that no complete coitus had been possible, on account of want of space. Treatment by hot hip-baths had been practised, and some efforts at dilatation had been made, which appeared to have been expended upon the urethra.

Dr. Bauer operated by incising the distended hymen in the middle line to a length of not quite a centimetre. About seven decilitres of thick treacly blood then flowed gradually away. The opening was afterwards enlarged, to allow the introduction of the index finger, and the os uteri was found to be wide enough to admit the finger, and the cervix thickened. The after-treatment consisted of vaginal injections of a one per cent. solution of carbolic acid, and the administration of ergot. The immediate and rapid evacuation of the retained fluid had in this case a favourable result, and the patient suffered from no unfavourable symptoms whatever. Scarcely a week after the operation she was engaged in hard field-work. She was again seen at the end of eight months. The vagina was then dilated, and the cervix normal. Menstruation had been regular in the interval. The author concludes that the large collection of menstrual fluid found could hardly have been poured out in the two months preceding the operation, but that it must have been collecting previously, although no symptoms had been noticed till marriage.—*Wiener Medizinische Wochenschrift.*

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*Accessory Ovaries.*

In the *Wiener Medizinische Wochenschrift* for May 26th, 1877, Dr. Beigel gives his experience as to the occurrence of accessory ovaries, structures which had previously been figured by Waldeyer, under the

title of "Neben-Eierstöcke." Out of 350 post-mortem examinations he found them in eight cases, only two of which were new-born infants. Their situation was always on the boundary line, described by Waldeyer, separating the peritoneum from the serous covering of the ovary. Generally they had a slender pedicle, but some were sessile, and their size varied from a hemp-seed to a cherry. The author has never observed more than three on the same ovary, but Waldeyer has figured as many as six. On microscopic examination they were found to consist of normal ovarian tissues, and to contain Graafian follicles in every degree of development, as well as relics of corpora lutea, and follicles which had dwindled without rupturing. The author concludes that both conception and also the pathological changes of normal ovaries may originate in these bodies. They may also have a bearing on the recurrence of menstruation after the complete removal of both ovaries.

## *Pædiatric Summary.*

### *Puerperal Infection in New-born Children.*

In the *Archiv für Gynäkologie*, B. x. H. 3, Professor Hecker gives his experience of the transmission of puerperal infection to new-born infants. He has had rich opportunities of observing such maladies, since of 281 infants who died in the Munich Lying-in Hospital 138, or 63 per cent., perished from the result of infection. When puerperal diseases were prevalent among the mothers, the mortality was high among the children, and the infants of mothers who died from septicæmia often perished also, and showed at the autopsy lesions of a similar nature. Some children, however, perished when the mothers had passed through the puerperal state in a perfectly normal manner. In many of these the umbilicus was the probable place of infection, which might have been communicated from the patients in the hospital. The disease commenced at a time when the funis had fallen off, and a wound capable of absorption therefore existed; also in such cases were commonly found local lesions, such as gangrene of the umbilicus, phlebitis of the umbilical vein, and secondary peritonitis. There are other cases, however, to which this explanation cannot apply—namely, those of children whose mothers remain healthy, but who, soon after birth, and before the funis has even become dried up, are attacked by puerperal infection, and rapidly die, often in so short a time as twenty-four hours. In these cases no lesion is found in connexion with the umbilicus, but signs of general septicæmia, with perhaps localisation in the lungs. The author considers that it would be an arbitrary assumption to suppose that infection in these cases is conveyed through the funis, and believes it to be much more probable that it is absorbed by the lungs.

He relates the following illustrative case:—On the 4th of May, 1873, a woman at full term of her second pregnancy was admitted, suffering from laryngitis. Tracheotomy was performed the same evening. The patient did well until the 6th, when secondary hæmorrhage occurred from the wound. The patient becoming moribund, Cæsarean section was performed before life was extinct by Professor von Nussbaum, and a healthy male child delivered. The child was removed to the lying-in hospital an hour and a half after its birth. The afternoon of the following day it was attacked by the well-known symptoms of puerperal infection—fever, laboured respiration, and a change in the skin to a yellowish tint. It died in about forty-eight hours. At the autopsy the left pleural cavity was found to be filled with blood-tinged purulent exudations, and the pleura itself covered with fibrin. There was inflammatory infiltration in the base of the left lung, and inflammation also of the right pleura. The umbilicus and its vessels were perfectly healthy. The child therefore died from an infectious pleuro-pneumonia, which could not have been derived from its mother. Puerperal septicæmia was present at the time in the lying-in hospital into which the child was removed, and other children died about the same time from septicæmic pneumonia.

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*Acute Fatty Degeneration in Infants.*

In the same number of the *Archiv für Gynäkologie*, Professor Hecker relates a case of acute fatty degeneration in a new-born infant. The mother was thirty-two years old, unmarried, and pregnant for the sixth time. The child was a male, and breathed well, but its skin had a greenish discoloration as if from decomposed liquor amnii. It died at the end of fourteen hours. At the autopsy, the lungs were found to be expanded, but there were numerous sub-pleural ecchymoses, and the lungs were filled in all directions with hæmorrhagic infarctions. The pericardium also showed ecchymoses, and the tissue of the heart was friable. The liver was of normal size, but coloured deep yellow, and its cells showed advanced infiltration with fatty molecules, which existed also in the heart and kidneys. The author considers this case confirmatory of the views published in the *Klinik der Geburtskunde*, von Hecker und Buhl, Band. i. 1861, by Buhl, who considers that acute fatty degeneration in children has very definite characters, somewhat analogous both to acute yellow atrophy of the liver and to the effects of phosphorus poisoning.

The author relates a second case somewhat analogous to the foregoing. A female child was born at full term on October 28th, 1876, whose skin had a dirty yellowish tint, and was covered with petechiæ about the size of a pin's-head, especially about the face, but well marked also on the buttocks and lower extremities. The mother was a primipara, but the labour had been normal, the first stage



lasting twenty hours and the second one hour. The child died after three days and four hours. At the autopsy extensive extravasations were found between the muscles on the left side of the neck, there was considerable effusion of blood tearing up the cerebellum, and the whole spinal cord was surrounded with blood. The liver was of fair size, but tinged yellow. The heart and lungs showed numerous ecchymoses, and there were effusions of blood, without lesion of the mucous membrane, in the intestinal canal. On microscopic examination the liver, heart, and kidneys were found to have undergone a moderate degree of fatty degeneration. The spleen was enlarged, weighing 50 gm., and measuring 10 by 4 cm. The proportion of white to red corpuscles in the blood was about one to six, and there was thus a certain degree of leukæmia. Both the mother and father of the child appeared to be in perfect health. The author remarks that Gerhardt has recorded cases of leukæmia as being not very uncommon in children, and having been observed even at the age of eight or ten weeks, but he believes that it has not hitherto been noticed as occurring congenitally.

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#### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

"On the Curability of Tubercular Affections." By Professor M'Call Anderson. Glasgow: Maclehose. 1877. Pp. 56.

"The Treatment of Spina Bifida by a New Method." By James Morton, M.D. Glasgow: Maclehose. 1877. Pp. 120.

"Ueber eine Vollständige Männliche Zwitterbildung." Von Gerhard Leopold. Leipzig.

"On Urethrocele, Catarrh, and Ulceration of the Bladder in Females." By Nathan Bozeman, M.D.

"Transactions of the American Gynæcological Society." Volume I. Boston. 1877. London: Trübner. Pp. 396.

"The Discovery of Anæsthesia." By Marion Sims, M.D. Richmond. 1877.

"Early Pregnancy Simulating Acute Uterine and Circum-Uterine Inflammation." By George J. Engelmann, M.D. St. Louis. 1877.

"The Relations of Ancient Medicine to Gynæcology." By Edward W. Jenks, M.D. Detroit. 1877.

"Viburnum Prunifolium." By Edward W. Jenks, M.D.

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ON THE BEARINGS OF CHRONIC DISEASE OF  
THE HEART UPON PREGNANCY AND  
PARTURITION.

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(Read before the Obstetrical Society of Edinburgh.)

(Continued from p. 232.)

CASE VI.—*Mitral Stenosis.—Breathlessness from Age of Fifteen.—Symptoms much worse after Marriage.—Miscarriage about Fourth Month of Pregnancy, and Death immediately after.—Post-Mortem.—Great Mitral Contraction.—Both Auricles and Right Ventricle Dilated and Hypertrophied.—Small Aorta.*

(Extracted from Bennett's "Clinical Medicine," Case CXXII. p. 585, edition v.)

ANN L——, at age of fifteen, began to be breathless on exertion, and to suffer from a troublesome cough with hæmoptysis. At age of nineteen she was admitted into the Royal Infirmary, Edinburgh, in May, 1859, when she was found to suffer from symptoms of mitral stenosis and bronchial catarrh. The presystolic murmur was loud. She got better, and married in December, 1859, but, in consequence of cardiac and bronchial symptoms, was readmitted on 13th February, 1860. She improved somewhat, except

that she had severe hæmoptysis (§ xxxij) on one occasion, till the 5th of May, when she miscarried of a four months' foetus, and died immediately thereafter.

Post-mortem examination showed the right heart much enlarged, both auricles and the right ventricle dilated and hypertrophied. Left ventricle normal and thinned. Mitral orifice admitted only the tip of the little finger. Aorta smaller in calibre than the pulmonary artery, which was somewhat dilated. Uterus quite healthy.

We have here an example of cardiac disturbance commencing at the age of fifteen—that is, it appears to me, becoming obvious at the time when menstruation became established. It is fair to suppose that up to this time the lesion, though most probably present, was so in a slight degree, and was entirely mute. There is in this case no history of an acute rheumatic attack, although evidence of a rheumatic diathesis is shown in the progress of the case, but, to economise space, I have not noticed it in my abstract of the record.

We therefore would seem, in this patient's case, to have to deal with a cardiac lesion originating in early life, if it had not been congenital, becoming worse, and that very manifestly, with the establishment of menstruation, and finally leading to the most disastrous consequences about the middle of pregnancy. The small left ventricle and the dilated auricles with narrow aorta and widened pulmonary artery are very characteristic of this special cardiac lesion. It would appear that here excessive action of a powerful and hypertrophied right ventricle, spending its strength against an extremely narrow mitral orifice, had more to do with the resulting pulmonary engorgement than any regurgitant action of the left ventricle, which moreover was very small and thin. Such a case abundantly proves the risk that is run by pregnancy under such conditions, and also another risk that I have not distinctly alluded to, although it is abundantly insisted upon by M. Peter—I mean the danger of exposure to cold. If such patients will get married whether we consent or not, then they ought to be kept as quiet as possible during pregnancy, and should be advised to avoid every influence

that is likely either to embarrass or disturb the circulation directly or indirectly. The onset of bronchial catarrh is one of the most dangerous indirect influences in such cases, and therefore its exciting causes especially ought to be avoided.

Under no conditions is good nursing more needed, nor likely to be better rewarded, than in warding off the exciting causes of pulmonary disturbances in connexion with pregnancy complicated with various cardiac lesions.

CASE VII.—*Extreme Stenosis of Mitral.—Violent Palpitation and Severe Breathlessness for Three or Four Years.—Death from Pulmonary Engorgement immediately after an Easy Labour, being the Patient's Fourth.—On Post-Mortem Examination Lungs found Healthy, but gorged with Blood.—Mitral Valve only admitted tip of Little Finger.—Heart small.*

(Extracted from Ramsbotham's "Midwifery," p. 509, footnote.)

I was requested by an old pupil to assist him in investigating the cause of death in a patient aged twenty-eight, who suddenly expired immediately after having given birth to her fourth child. She had been for three or four years subject to violent palpitations and much difficulty of breathing on the least exertion, even walking upstairs. She had constant cough, and occasionally expectorated small quantities of blood. My friend was not called until the os uteri was entirely dilated. The labour was unusually easy. The child was born an hour after he entered the room, and the same pain which expelled the breech also threw off the placenta. She appeared not to have suffered much from fatigue, and inquired concerning the sex of the child. While, however, her attendant was tying the funis, he observed that she was attacked with a slight convulsion, and before he could get round to the side of the bed near which her head lay, she had ceased to breathe. The uterus was firmly contracted, and contained a very small quantity of coagula. The viscera of the abdomen were remarkably healthy. The lungs were healthy in structure, but gorged with blood. The heart was small and very flaccid. The mitral valve was much thickened, and the communication between the

left auricle and ventricle would only just admit the end of the little finger. There were about five ounces of serum in the pericardium.

The statements in this case are too brief to prove anything further than that this patient had extreme mitral stenosis, from the evil effects of which on her pulmonary circulation she had suffered for three or four years, and finally died suddenly, after an easy labour. It is to be regretted that the brain and lungs were not examined for embolism or apoplexy, although there is little reason to believe that either condition would have been found.

But from the report we are very far from being able to answer the question why this patient suddenly died. I would here remark that, from what we know of the invariable sequence of a prolonged mitral stenosis, the auricles, however thin they may have been, must have been dilated, and more especially the left auricle. The pericardial effusion would not account for it. If the mere stenosis was so intense as to give rise to death by backwards congestion of the lungs, then one would have expected more threatening symptoms during the labour, when such congestion could scarcely fail to have been aggravated by the increased vascular tension in the thorax during each pain, and especially during each down-bearing pain, and not after the labour had been terminated, and apparently with so much ease. There is one possibility which our knowledge of what occurs occasionally in such labours suggests, and which the absence of very strict statements regarding the case does not exclude, and this is, that during this patient's delivery partial unconsciousness on her part may have led to the serious symptoms being unobserved by her attendants. It may also have been the case that the heart was so fattily degenerated or otherwise enfeebled that it was entirely exhausted, even with the extra efforts of an easy labour, and suddenly ceased to beat, like a worn-out horse, which carries its rider out of the reach of danger to his own door, and then drops down dead. But of this we have here no exact information in consequence of the meagreness of the record. It is specially in such cases that Spiegelberg's idea of dis-



turbed relative pressures seems to be of value as an explanation. It is just possible that here the cause of death was due to such an amount of fulness of the left auricle and of the right heart, that the weakened right heart was overpowered and death followed in the condition of diastole. But that the diminution of aortic pressure, even if such were proved to occur, had anything to do with the fatal result, I cannot see indicated. Over-distension of the right heart and practical cardiac paralysis therefrom would appear, therefore, to have been the main element that hurried on the death.

*CASE VIII.—Stenosis of the Mitral of moderate amount.—Severe Chest Symptoms (Œdema and Congestion of Lungs) during the latter months of Second Pregnancy.—Premature Labour suggested, but came on Spontaneously before arrangements could be completed, and Patient died during Confinement of Suffocative Œdema of Lungs.—Post-Mortem proved Lungs intensely Œdematous.—Heart ordinary size.—Aorta small.—Pulmonary Artery dilated.—Mitral Valve contracted.*

(Abridged translation from Hecker und Buhl, s. 173. Leipsig: 1861.)

Patient, twenty-four years old, admitted in the ninth month of her second pregnancy. Previous labour easy. Had suffered from breathlessness for some months, and spat blood three weeks previously to admission. On examination lips cyanotic, respirations 64 per minute, and very difficult; pulse 120. No pulmonary dulness, but loud, sonorous râles everywhere audible. A weak presystolic murmur audible with heart's sounds. Acute œdema of lungs diagnosed, and arrangements made to effect delivery by artificial means so soon as practicable. Patient slept well on night after admission, and seemed better in the morning. Pulse 100, respiration 40. But the following evening at 6.30 P.M. there was a frightful exacerbation of all the symptoms of dyspnœa, the liquor amnii escaped, and the patient was carried into the delivery room, but died in half an hour of suffocative œdema of the lungs, the pulse keeping as low as 100, and the convulsive efforts at breathing being terrible,

and copious quantities of frothy mucus escaping from the mouth. Cæsarean section was performed two minutes after death, and a dead, nearly mature child extracted.

Post-mortem examination revealed intense congestive œdema of the lungs everywhere, partial consolidation at base of right lung, which sank in water. Heart ordinary size. Aorta *strikingly small*. Pulmonary artery somewhat dilated. The left auriculo-ventricular valves were narrowed into a circular opening, which still allowed a man's finger to pass. On their auricular aspect a number of fine warty vegetations were found.

This case is one of those in which the disturbances of labour pains and the presence of bronchitic obstruction to the circulation, throws a heart with a badly compensated mitral obstructive lesion into such perturbation that a fatal result is precipitated from acute pulmonary suffocative œdema of the lungs. Such is a very common result in cases of labour complicated with cardiac disease. It is again to be noticed how commonly these cases have labour coming on prematurely. This case is of especial interest, as it is one of the earliest well-described cases, and was largely the means of directing the attention of obstetricians to this important subject, as I have already pointed out in speaking of Hecker's original paper.

CASE IX.—*Mitral Stenosis with Insufficiency.—Dilatation of the Right Side of the Heart.—Severe Chest Symptoms (Edema of Lungs with Bronchial Congestion).—Symptoms during Labour very Critical.—Venesection.—Liquor Amnii Excessive.—Recovery.*

(Abridged translation from Spiegelberg, *Archiv für Gynäkologie*, Bd. ii. s. 241.)

This patient was thirty years old, and had previously been pregnant when she was delivered naturally, and had enjoyed good health till the middle of this pregnancy, at the assumed end of which she was admitted. Her sufferings included a tormenting cough and great breathlessness. Her appearance was cyanotic; pulse small, soft and rapid. Œdema of the lower limbs and of the abdominal walls was present; uterus

also was much distended with liquor amnii. This the patient had noticed to increase of late very rapidly, and there was a little ascites, but no albuminuria. Examination showed the liver pushed up to level of fifth rib, wide-spread sonorous and sibilant râles over the chest, emphysema of border of lungs, and insufficiency with stenosis of the mitral valves, with slight hypertrophy and manifest dilatation of the right heart. Small doses of digitalis and stimulants were administered with relief of the subjective symptoms. Labour supervened some days afterwards, and along with it the chest symptoms attained a most critical height, so as to necessitate venesection. With the discharge of the excessive liquor amnii, however, they abated quickly, and after the labour they completely remitted, and the lying-in period was passed without further disturbance.

We have here a case of mitral stenosis, not pure, but, as usually happens, combined with insufficiency of the valves. It has most of the usual peculiarities. However the lesion had arisen it did not manifest itself till the usual period—viz., till past the middle of the pregnancy. The usual routine symptoms of cough, dyspnœa, bronchitic râles, cyanosis, and palpitations were present in increasing intensity as the pregnancy advanced, and as the over-distended uterus pressed more and more upon the thorax, attaining to a maximum of threatening intensity on the occurrence of labour. Such a case is exactly of the kind likely to be benefited by premature labour. In support of this opinion it is only necessary to notice the very marked abatement of the symptoms that followed upon the escape of the excessive liquor amnii.

It is interesting to notice that Spiegelberg places greatest reliance in a somewhat heroic treatment, including venesection and purgatives, and that by bloodletting and antimony M. Peter rescued his famous case after the other physicians had given the lady up for dead.

In this patient's case there is reason to believe that though the compensating arrangements in the heart were seriously interfered with, and were very unequal to the extra demands upon the organ consequent upon pregnancy, and particularly with a uterus in a condition approximating hydramnios, yet

they were sufficiently good to support a tolerably regular circulation when once these two disturbing forces were removed. It forms also a very confirming proof of the injurious effects which a pregnancy introduces into the condition of a patient who suffers from chronic cardiac disease, even when the lesion is nearly mute under ordinary circumstances.

CASE X.—*Mitral Stenosis with Insufficiency.*—No Special Trouble before the Sixth Month.—Then Breathlessness, Palpitation, Cough, Expectoration of Rusty Sputum, and occasionally of Blood.—Labour Premature during Seventh Month, with Unconsciousness and extremely alarming Symptoms.—After this, Remission of urgent Symptoms.—Death Nine Months afterwards with Bright's Disease.—On Post-Mortem Examination: Pericardium distended with Fluid.—Heart twice the ordinary size.—Both Auricles and Right Ventricle greatly dilated; Left Ventricle natural size.—Left Auriculo-Ventricular Opening admitted only one Finger.—Lungs partly collapsed, partly emphysematous and œdematous.

(Abridged translation from Fritsch, *Archiv für Gynäkologie*, Bd. x. s. 272.)

Patient twenty-four years old. Chronic invalid. Experienced no extra trouble from her pregnancy till the sixth month, when her cough became excessive, expectoration purulent, and every kind of exertion set up palpitation. She also suffered from gastric catarrh, loss of appetite, sleeplessness, and dyspnœa. On admission, 4th October, 1871, Professor Olshausen examined her, she being then in the seventh month of her pregnancy. He found slight cyanosis of the lips and eyelids. Cardiac region somewhat arched forwards from the second rib downwards. Cardiac impulse visible, and causing tremor of almost the whole mamma. Cardiac dulness begins on left at lower border of second left rib; is absolute over the third. Inferiorly it is impossible to ascertain its amount, owing to the mamma. In the third intercostal space, the transverse dulness reaches from the edge of the sternum to the mammillary line, and measures  $3\frac{1}{2}$  to 4 inches. Precordial thrill present everywhere, weak



but distinct. Apex beats most distinctly in the fifth intercostal space, a finger breadth outside the mammillary line. At the apex a prolonged rasping murmur, and a weakened heart sound. Over the aorta both hearts' sounds audible, the pulmonary second sound intensified.

The diagnosis made was, insufficiency and stenosis of the mitral, with hæmorrhagic infarction of the lungs. There were coarse moist râles over the whole breast, and a limited dull area inside the left scapula, with weak breathing there and crepitation. The radial pulse was feeble, but only quite seldom was there a smaller or missed beat. Œdema of both legs.

The patient with good nursing got on tolerably well till her confinement. Only at times the cough and expectoration increased so as to require treatment with morphia and expectorants. The sputum was frequently rusty, and often contained slight admixture of pure blood.

On the 9th of October an attack of limited pneumonia of the right lung came on, which was treated with digitalis, and the patient improved a little. In the night of the following day violent cough with shortness of breath set in, and the labour commenced. The patient's countenance was strikingly pale and cyanotic. The pains were weak, yet the labour progressed with surprising rapidity. Notwithstanding, the patient was now on the point of death. The pulse was slow, small, extremely irregular, and intermittent. Unconsciousness came on. The forceps were then applied and the labour easily terminated. The placenta was expelled by the natural efforts. Immediately after delivery the patient got very much better; she awoke as if from deep chloroform narcosis. The pulse became quicker. There was no postpartum hæmorrhage. The patient improved, and was dismissed on the 25th October. But shortly after that she again grew worse, partly owing to her circumstances in life, which were very wretched and depressing. The œdema increased and extended to the whole body. Albumen appeared in the urine, and the patient died of Bright's disease on the 11th July, 1871.

The sectio revealed the pericardium greatly distended,

reaching transversely from 1 to  $1\frac{1}{2}$  inch on the right of the sternum to the axillary line on the left, and perpendicularly from the second to the ninth rib. Its cavity contained a large amount of clear serous exudation.

The heart was at least doubled in all its dimensions, tensely filled with dark blood.

The left auriculo-ventricular opening admitted one finger ; both cusps remarkably diminished, their free edges thickened, swollen, tolerably smooth, the chordæ tendineæ very much shortened and yellow. The other valves completely free. The muscular tissue in the right ventricle somewhat thickened, generally pale ; in the left ventricle plainly spotted yellowish. The cavity of the left ventricle of normal size. Both auricles and the right ventricle greatly dilated.

Left lung of normal size, somewhat dense, its upper lobe slightly emphysematous ; in the lower lobe there is a largish portion almost completely empty of air, loosely infiltrated, of a slightly granular palish red, moist section. In the bronchi frothy fluid. The right lung was slightly adherent ; its upper lobe very voluminous, dense, almost completely empty of air ; its cut surface brownish-red ; distinctly granular. The infiltration involves the upper part of the middle and lower lobes, which latter appears principally filled with air, but œdematous.

Both kidneys were hardened and slightly injected ; cortical substance increased ; yellowish coloured ; shining (not amyloid) ; much fatty degeneration of the tubuli uriniferi.

In this particular case we find the presence of heart disease accompanied with the most of its baneful effects upon pregnancy. We have nearly the same story in all these cases. The patient gets on well till the fifth or sixth month ; then comes breathlessness, palpitation, pulmonary hæmorrhage, and so forth, in ever increasing amount, till spontaneous interruption of the pregnancy occurs. But the delivery in this patient's case proved more favourable than it is wont to be, on account, no doubt, of the fact that the stenosis, though serious, was in a considerable amount compensated for by a powerful right ventricle, which was able to maintain the circulation through the lungs notwithstanding the difficulty

which the blood current experienced in passing the block on the left side ; but it would appear that so soon as the obstruction to the systemic circulation owing to the renal disease was superadded to that in the pulmonic circuit arising from the stenosed mitral, the heart was no longer able to maintain the balance of the circulation.

It is to be noticed that in this case and in others observed by Fritsch there was an astonishing degree of unconsciousness during labour. This I have not been able to notice except in the case of Mrs. C. (Case III.), and then it occurred only to a small amount ; but as several of our cases had chloroform during the difficult part of the labour, it is possible that this condition may have occurred oftener in the cases observed by me and my friends than we have been able to record.

It is surprising how easy the labours are in those cases of severe cardiac complication, and yet how extremely irregular the pulse is apt to become during it. The condition of both auricles in this patient's case is worthy of notice, as being symptomatic of the special lesion under consideration.

CASE XI.—*Mitral Stenosis.—Slight Attack of Acute Rheumatism after Second Confinement, followed by Severe Illness, involving Heart and Kidneys.—Admitted in Seventh Month of Third Pregnancy, with Symptoms referable to Mitral Stenosis with Retro-Dilatation and Venous Congestion.—Induction of Premature Delivery thought of towards end of Eighth Month, but Labour supervened spontaneously, Patient being in a state of unconsciousness.—Death three months afterwards.—Post-Mortem : Great Dilatation of Right Heart, also of Left Auricle.—Slight Enlargement of Left Ventricle.—The Mitral Opening did not allow a finger to pass.—Valves thickened.—Evidence of Pulmonary Infarction, recent and of old standing.—Hydrothorax.*

(Abridged translation from Fritsch, *Archiv für Gynäkologie*,  
Bd. x. s. 277.)

This case came under treatment in the seventh month of the third pregnancy. Patient had an attack of acute articular

rheumatism, confined however to the shoulder joints, after her second confinement, but had not been kept in bed by it. Fourteen days after this seizure she had to take to bed for disease of the heart and kidneys. All her present symptoms point towards a mitral stenosis with considerable retro-dilatation and venous congestion. Both legs are enormously œdematous ; vulva so swollen that the patient can only lie with the legs widely separated ; the œdema extended up to the hypogastric region ; the jugular veins considerably enlarged and undulate violently. The patient is so short of breath that she can only sit in bed and speak in broken sentences. The sputa are frothy, without blood and pus, but from time to time blood has been expectorated. Patient complains of nausea, frequent vomiting, tormenting headache, and of attacks of unconsciousness and giddiness. Over the entire lungs small and large moist sounds are audible ; bronchial breathing at the lower edges of the lungs, before and behind ; cardiac dulness begins on the left with the third rib, passes a little beyond the nipple line outwards, and extends to the right two finger-breadths beyond the right edge of the sternum ; cardiac impulse consists in an irregular heaving tremulous motion of the lower half of the left thorax ; the undulation extends beyond the xiphoid process on to the abdomen ; both hearts' sounds are changed into loud grating murmurs ; the second pulmonary sound is intensified ; much albumen and pus corpuscles, but not tube casts in the urine.

The patient seemed so ill that premature labour was thought of and discussed. Suddenly, however, the membranes broke, and a large quantity of water escaped. On examination immediately afterwards the cervix was found persistent ; but in the course of the night labour came on when the patient was alone and in a state of unconsciousness, and the child was born without assistance from any one. The child was fully four weeks before the full time. The patient got slightly better for a few days, then the kidneys became affected, the œdema, cough, and dyspnœa increased, hydrothorax, diarrhœa, and finally discharge of blood from the bowels came on. The patient died about three months after



delivery. Post-mortem, twenty-four hours after death, showed œdema of the whole lower half of the body. In the abdominal cavity  $1\frac{1}{2}$  litre of ascitic fluid.

The pericardium lies exposed in great amount, reaches on the left to nipple line, and on the right at least  $1\frac{3}{8}$  inch. beyond right edge of the sternum. It contained a large amount of serous fluid. The heart is without apex, globular and double the ordinary size. The left auricle is decidedly dilated, the mitral valve contracted, its orifice does not admit one finger. The valves are much smaller than ordinary, thickened and knotty, and the chordæ tendineæ shortened. The muscoli papillares are thick and short. Left ventricle slightly enlarged, greatest thickness of the ventricular cone 1.2 cent. Muscular tissue soft, brittle, anæmic, and fatty. Right auricle and ventricle enormously dilated. The thickness of the latter measures not much more than two millimetres, and both the venæ cavæ are greatly distended. The valves are free. Both kidneys are small and pale. Cortical substances diminished. In the surface of the kidneys small extravasations of blood visible. The renal tissue strikingly hard.

All the bronchi are intensely reddened. There are in the lungs apoplexies, infarctions, and cicatrices of old standing, and recent infiltrations. Some portions compressed. Hydrothorax present.

In this interesting case we have again serious symptoms becoming more pronounced after the middle of pregnancy. There is the usual thinning and dilatation of both auricles, with great dilatation and thinning of the right ventricle. That the left ventricle was rather enlarged than diminished in size may be due either to the natural tendency of hypertrophy of that cavity of the heart during pregnancy having overcome the tendency of the special cardiac lesion to lead to diminution in the size of the left ventricle, or it may have been because the case was a comparatively acute one, in which the chronic effects of stenosis of the mitral had not had time to become pronounced. This case, unlike most of the examples of stenosis with which we have had to deal, presents an unmistakable history of acute rheumatism coming on after the previous delivery. It also illustrates the greater tendency for preg-

nancy to act injuriously upon a heart which suffers from a comparatively recent lesion, in which the compensation had been but very imperfectly established before the commencement of the pregnancy.

This is not the only example of the kind among the cases I have collected.

We have also premature labour coming on spontaneously, but with little, and that too only transitory, relief to symptoms, a result which rather throws doubt upon the propriety of inducing labour under such circumstances; for if, when the delivery comes on naturally, the prognosis for the mother is scarcely, if at all, bettered thereby, it follows that the irritation and annoyance necessarily associated with every method of inducing labour artificially must be expected to increase the mother's risks. Still, the excessive amount of liquor amnii would have quite justified the induction of labour in this instance. It is positively surprising how frequently those cardiac cases miscarry. But how it should come about I am considerably at a loss to determine. I am inclined to think that in some cases, as in Mrs. C.'s, the premature labour is due to retro-dilatation of the vessels leading to separation of the placenta. But this can only be applicable to a few of those cases. It would rather appear that labour came on co-ordinately with, and as a result of, imperfect nutrition of the brain and cord resulting from the imperfect aëration of the blood, owing to the pulmonary congestion and œdema. If it be true, as is rendered more than probable by the investigations of Frankenhaüser and of Obernier, that in the cerebro-spinal nerve system the inhibitory centres of the uterus are situated, we have merely to assume that the cerebral changes in those severe cases attained such a height as to paralyse the inhibitory centres of the uterus, and thereby lead to the onset of labour prematurely.

That nervous changes have much to do with the onset of premature labour in connexion with severe heart disease is, I think, rendered further probable by the occurrence of more or less complete unconsciousness during the delivery in several of the cases.

CASE XII.—*Mitral Stenosis and Insufficiency with Aortic Insufficiency.*—*Enlargement of the Left Side of Heart, consequent upon an Acute Attack following the tenth Pregnancy, which was a Placenta Prævia.*—*Aggravation of Symptoms during the latter half of the eleventh Pregnancy.*—*Spontaneous Premature Labour in the eighth month whilst Patient was in a state of Unconsciousness.*—*Cardiac Symptoms much aggravated therewith, and Death forty-eight hours afterwards.*—*Post-Mortem: Enlargement of Left Heart.*—*Left Auriculo-Ventricular Valve thickened and nodulated.*—*Opening allows one finger to pass.*—*The Right Heart only moderately dilated.*

(Abridged translation from Fritsch, *Archiv für Gynäkologie*, Bd. x. s. 280.)

Patient, aged thirty-nine, had had nine children living, at full term. Tenth pregnancy was complicated with placenta prævia, and delivery was completed by *accouchement forcé*, accompanied with much hæmorrhage. All went well for some days. On evening of 5th patient had a rigor, and was seized with a stitch in the side and pain in breathing. Examination next day detected pleurisy involving the lower part of the left lung posteriorly, as also pericardial friction and peri- and para-metritis. In the right calf and left thigh a phlebotrombosis and periphlebitis were developed. Pulse was 100, and temperature 105·8. Under treatment with hydropathic packs, digitalis, quinine, and purgatives, all the symptoms except the cardiac subsided. Yet the temperature continued at 104, and the pulse remained rapid. At base and apex of the heart a distinct murmur was heard instead of the first sound, which also somewhat masked the second sound. This was regarded by Professor Olshausen as endocardial in origin, whilst Fritsch was inclined to look upon it as anæmic. The patient gradually got better, but the heart murmur persisted, and she began to suffer from palpitation and dyspnœa. In the summer of 1874 the collective symptoms of a badly compensated mitral lesion were found present. Heart's perpendicular dulness reached from the second to the seventh

rib on left side, and the transverse from the nipple line to quite beyond the right border of the sternum. Both cardiac sounds changed into murmurs; especially the loud, grating murmur of the first sound, were audible everywhere. Pulmonary second sound not essentially intensified. Slight œdema of the ankles. Thus evidence of undoubted stenosis of the mitral with insufficiency was established. The clinical history pointed to this being the result of the acute rheumatism that followed the tenth confinement, rather than that it was due to the lighting up of some antecedent chronic lesion. But whether it arose as part of the pleurisy and pericarditis, or resulted from the phlebitic disease, and was thus of the nature of ulcerative endocarditis, it was impossible to determine with certainty.

Treatment was directed towards mitigating the most urgent symptoms. These were dyspnœa and oppression.

In the summer of 1875 the patient was again seen. She was now in the fifth or sixth month of pregnancy. During the first three months she had felt better than during the last year. But now her condition was very bad, and the palpitation and dyspnœa had greatly increased. The medicines prescribed were of little use: the condition got constantly worse. The œdema, however, did not pass above the lower extremities. After another six weeks the patient's husband brought Dr. Fritsch a fœtus of about eight months, which had been born dead during the previous night. He reported that his wife had become suddenly restless during the night, and had not answered when spoken to. That he himself then fell asleep again. That after some time his wife had groaned loudly; he had looked at her and she had become unconscious. That a female neighbour on being called in had raised the bedclothes to rub the patient's legs and had discovered the dead child in the bed. He had seen no blood. His wife had gradually come to herself again. Fritsch, on arriving at the patient's house, found her now on the point of death. The pulse was not to be counted. The most of the beats were quite small; suddenly there would occur a largish pulse-wave; at times the pulse stopped entirely for three or four seconds. The heart hammered against the



breast wall with extreme irregularity. The patient was quite conscious, and believed she was going to die. Her lips were cyanotic, the visible skin and mucous membranes were pale. Urine discharged clear in colour and large in quantity. Loose stools were passed unconsciously. The patient died forty-eight hours after labour.

Post-mortem showed œdema of both legs. Little serous effusion in either abdominal, pleural, or pericardial cavities. The heart manifestly enlarged. The enlargement confined almost exclusively to the left side of the heart. The heart extended on the left beyond the nipple line, and perpendicularly from the second to the seventh rib. On the right it terminated about the right border of the sternum. The vasa propria of the heart were distended to the size of the little finger. The left auriculo-ventricular opening was contracted and insufficient, but one finger could pass it. Valves at their edges were nodulated; otherwise smooth and formed into a cartilaginous ring. Pericardium in their neighbourhood was reddened in its deeper layers. Aortic valves were incompetent, all three being altered. Left auricle and ventricle were enlarged to twice the natural size. The wall of the ventricle not thinned—thickest part = 1·4 cent. Right heart only moderately dilated.

Kidneys large and congested; cortical substance increased.

We have from the history of this case the acute supervention of endocarditis upon a severe labour complicated with placenta prævia and much hæmorrhage. No better example could be found of the deteriorating effects of pregnancy upon the course of chronic cardiac disease than this record presents. It will be noticed that notwithstanding many other serious complications the patient recovered tolerably well, and for nearly twelve months she was decidedly improving. But having the misfortune to become again pregnant the evil effects of the pregnancy upon the heart disease began to develop themselves in the shape of palpitation and dyspnœa of a most distressing kind.

In its turn the cardiac disease led to interruption of the

pregnancy, the labour having come on during the eighth month, and while the patient was in a state of complete unconsciousness. The history of the delivery is extremely odd and very interesting. But the usual sequence followed. The patient got no real relief from delivery, but succumbed within two days, with great œdema of both lungs. In consequence of the considerable amount of aortic insufficiency present in this case it is easy to explain the great amount of enlargement affecting the left ventricle. The dilatation of the left auricle was no doubt partly due to the stenosis of the mitral and partly referable to the regurgitation from the left ventricle. The causation of the dilatation of the right heart is too obvious to need demonstration.

The physical signs in this case are given with a somewhat regrettable degree of looseness, so that it is difficult to know exactly what is meant to be implied in them, or how they are to be squared with the post-mortem appearances. Still the history of the case is as interesting as it is curious.

We have thus collected and commented upon a series of twelve cases of chronic cardiac disease, in which mitral stenosis, if not always the only lesion, was at least the leading one. The results are now to be grouped together in as little compass as practicable, so that we may form as correct an idea as possible of the effect of this complication of pregnancy.

CASE I.—Patient well till latter end of first pregnancy; in good health after delivery till middle of second pregnancy, which terminated spontaneously at end of eighth month. Mother died suddenly, after six days, of exhaustion and pulmonary œdema; baby, a month afterwards.

CASE II.—Complicated with tricuspid lesion. Premature labour came on in the beginning of ninth month. Death ensued fifteen days after delivery from pulmonary œdema, hydrothorax, and exhaustion. This patient suffered also from embolic right hemiplegia for seven years.

CASE III.—Safe delivery after most threatening symptoms. Is hemiplegic and aphasic. As in Case II., it is im-

possible to fix the precise date of the commencement of the lesion in this patient, though it probably only dates from the immediately preceding confinement.

CASE IV.—Escaped with nothing worse than extreme irregularity of the pulse and cyanosis during the latter stage of a first labour, which was rather difficult.

CASE V.—Ended in abortion at the fifth month of her first pregnancy, with death thirty-six hours afterwards.

CASE VI.—Also ended in abortion in the fourth month of the first pregnancy, and death immediately afterwards.

CASE VII.—Ended in sudden death immediately after an easy labour. It is not stated whether or not the full term had been reached in this instance.

CASE VIII.—Patient died during delivery at about full time of suffocative œdema of the lungs.

CASE IX.—Presented the most threatening symptoms of breathlessness and palpitation during delivery at full time, but ultimately recovered so far as to be able to leave the hospital.

CASE X.—Led to supervention of labour at seventh month, and its being finished whilst the patient was quite unconscious, accompanied with the most threatening symptoms; slight relief followed, but the patient died of exhaustion and Bright's disease nine months afterwards.

CASE XI. and CASE XII. both ended in premature delivery in the eighth month, and were followed, the former by death three months afterwards, and the latter by death thirty-six hours after delivery, both being accompanied with pulmonary œdema and congestive bronchitis.

We have thus nine cases out of the twelve, or 75 per cent. fatal, which indicates a tendency to death in the combination of mitral stenosis with pregnancy, which is surely sufficiently grave, and more especially seeing that there was in none of the cases any purely obstetrical reason, such as pelvic deformity, likely to add additional risk to the delivery.

Of these twelve cases four were primiparæ—viz., the fourth, fifth, sixth, and ninth—and of these three died.

Three were pregnant for the second time—viz., first, eighth, and ninth, and of these three two died.

The other five were respectively at the time they were under observation confined for the third, fourth, sixth, tenth, and twelfth time. They all died except the last, which patient, however, appears to me to have suffered only a comparatively short time from the cardiac lesion, which at any rate was not of an advanced type.

It will be observed that the deaths occurred usually either suddenly during the labour, or within a few days or weeks afterwards. In one case life, though thrown into extreme jeopardy during delivery, was prolonged for nine months afterwards. The next longest period after delivery when death occurred was three months, after which we come down to three weeks or a few days. We see also that there is no proved instance of death from embolism among the cases. A very manifest tendency to abortion or premature labour is a most evident fact in connexion with all these patients. Very few indeed of them are found to carry their children to the full time. But after delivery there is not a corresponding improvement of symptoms, the reason being, in my opinion, that in addition to the shock and exhaustion inflicted upon the deranged heart during delivery, the evil results of the original disturbed relations of compensation are equipollent during the childbed week as during the latter period of pregnancy.

The frequent occurrence of congestive bronchitis, pulmonary oedema, apoplexy of the lungs, dyspnœa, &c., is worthy of very serious consideration, but as these symptoms are not special to this form of cardiac lesion, I pass on to speak of the other forms of cardiac disease before instituting a more strict comparison between the effects of the individual varieties.

*(To be continued.)*

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# ON KOLPOKLEISIS AND OTHER ALLIED PROCEDURES,

AS MEANS OF TREATING VESICO-VAGINAL FISTULE.

*Being an Answer to the Article of the late Prof. Simon of Heidelberg, entitled "A Comparison of Bozeman's Operation with that of the Author."*

By NATHAN BOZEMAN, M.D., New York.

(Continued from p. 242.)

I SHALL now introduce the correspondence which passed between Professor Simon and myself about a year after the above operations were begun, in order to show the views which we both entertained at that date with respect to the causes of failure in the so-called "little Russian" (Case II.) upon which we operated jointly, and to indicate the value attached by each of us to the points distinguishing our respective methods of operation. This course seems to be particularly called for, since Professor Simon has referred in his paper to several of these points relating to my particular views without connecting them with the circumstances under which they were at that time discussed. Therefore, in justice to myself and likewise to my distinguished opponent, I submit, as a part of my reply, the letters which we interchanged, believing that no sort of objection can be raised to this procedure, because of the purely scientific interest of the correspondence.

[*Translation.*]

"HONOURED COLLEAGUE,—Up to this time we have vainly hoped for your visit. We have still in the hospital the patient (little Russian) upon whom you performed the operation with unsuccessful result. I would be very glad if you would again operate upon this case, as I believe the cure will now be very difficult, since you have cut out so much substance.

"We have also several more fistules, which lie in the anterior part of the urethra, for you to operate upon. The rest I will communicate to you verbally.

"Yours respectfully,

"PROFESSOR SIMON.

"Heidelberg, September 25th, 1875."

"MY DEAR PROFESSOR SIMON,—With regard to the case to which you refer (little Russian), it is to me most interesting, and I should be delighted to complete the cure, as I feel very confident I could at another operation, were it possible for me to return to Heidelberg.

"The failure of my first operation resulted, I am satisfied, from an improper understanding on my part of the relationship of the end of the urethra to the anterior lip of the uterus. This little point constitutes, I conceive, a most important difference between your operation and mine, and when one follows another, as in the order of this case, without proper consideration, a similar failure is liable to take place in a majority of cases. This mainly arises from the difference existing between us in the position of the patient. Your position (*Steiss-Rückenlage*) requires that the uterus shall be pulled down to the mouth of the vagina, thus placing the anterior surface of the cervix uteri under and opposite the urethral surface of the vagina. In this relationship the two opposing surfaces are pared off, and with your silk sutures lapped one upon the other. In this relationship they usually unite, I have no doubt, with considerable certainty, unless the traction be very great, and, in that event, a partial failure is likely to follow from the cutting out of the central sutures, as happened after your operation in the case. In either event, however, there must result from the retraction of the uterus a curvature of the urethra at the seat of union, with the concavity presenting to the pubic arch. In my position (the knee-chest), the parts, on the contrary, are operated upon *in situ*, without being changed in their normal relationship. The result is that the edges of the fistule, instead of the surfaces named, are pared perpendicularly and co-optated without subsequent distortion of the urethra. In the event of failure at any point in the line of union the little remaining fistulous track extends directly through between the original borders, and not between flat opposing surfaces as happened after your operation.

"In my operation in the case in question, it was from not knowing the extent to which the urethra had been overlapped by the cervix that I was unconsciously led to remove so

much of the urethra in the paring process, and from which you now apprehend incontinence of urine when complete closure is effected. Had I understood the relationship of the parts involved at the time I operated as well as I do now, as I believe, I should have divided your cicatrix on either side of the fistule to the extent, at least, of restoring the opposing edges of the fistule to a smooth plane, just as I am in the habit of doing in cases where the cervix uteri is fixed in the bladder. Even in the third operation now called for I should proceed in this manner, and should expect to get a good result, both as to closure of fistule and retention of urine.

"Now, Doctor, these are my views of the case, frankly stated. If yours should differ, may I ask you to be equally frank in stating them. The point I conceive to be one of great practical importance, and well deserves serious consideration. My great regret is, that I am unable to come to Heidelberg and talk with you on the subject. I still hope, however, to see you again before I return to America next year.

"Yours very truly,

"NATHAN BOZEMAN."

[*Translation.*]

"HIGHLY RESPECTED COLLEAGUE,—I write to you once more to invite you to come to Heidelberg in the course of eight or ten days. It is only necessary for you to spend from eight to fourteen days, perhaps even a shorter time, to carry out everything which will enable us to complete our judgment upon your method of operating. I will mention the matters which I would most gladly have settled, and at the same time will refer to you other points which may be interesting to yourself.

"1. I would like you to carry out the operation in the case of the little Russian, which you have yourself proposed. I had consulted with my assistants concerning the same method, but I fear that continence will not be obtained in this manner, even if a perfect cure take place. Before your operation upon the little fistule, only the size of a pea, the urethra was  $2\frac{1}{2}$  centimetres long, and, after the same, only  $1\frac{1}{2}$  to  $1\frac{1}{4}$  centi-

metres. Should the urethra be again treated in the same manner—viz., be cut out with so great a loss of substance—there would remain only one-quarter to one-half a centimetre. Therefore, the cure of the defect would, by your method of operation *at this point*, be very doubtful, because the edge of the urethra is very thin, and the posterior edge, lying within the uterus, would be bruised to some degree by excising with the scissors. I would have more confidence in the plan if the entire operation had been carried out with the knife alone, and if the urethral part of the defect had been saved as much as possible. As, however, it happens that you count with great confidence upon the cure, even if you excise with the scissors, I beg you, on that account, to carry out the operation yourself.

“ 2. I have again five patients here with fistules. You can now operate upon fistules *which lie against and in the urethra*, while I will operate in those cases which *lie deeper in the vagina*.

“ 3. I have further to inform you that the patient upon whom you last operated, and in which case, at the time she left Heidelberg, a fistule remained through which the point of the finger could enter the bladder, will only return here next spring. At present she believes she could not endure so trying an operation.

“ 4. Finally, I desire to convince you also of the ulterior results in the cases of the two women upon whom I operated for urethro-vaginal fistule. You, doubtless, remember the case of the woman (Feige) upon whom another surgeon had performed transverse obliteration of the vagina, and which I again separated. In this case there was an oblique-lying urethro-vaginal fistule, and after the widening operation of vagina by yourself, there was a second small fistule, the size of the button of a probe, in the neighbourhood of the mouth of the womb. The first fistule which I operated upon in your presence, and in which a small opening remained, turned out precisely as I had said in advance, and as I have already informed you, on the occasion of your passing through Heidelberg—viz., healed of itself without any further operation and without any cauterization, after the third week,



by cicatricial contraction. The second little fistule, which lay at the month of the womb, I operated upon later, and healed.

“In the second urethro-vaginal fistule (Weick), in which the widening by incisions, with the subsequent treatment by tampons, was alike without result, I brought about the closing of the opening, as you will remember, by means of six sutures. But immediately after the operation the urine flowed off. Upon examination, after the cicatrization, the fistule was found to be healed along the entire line of union. Only a very small slit of the outermost left angle, which lay outside of the suture, still remained open. This little slit was obviously not closed by the suture, and, on this account, the flow of urine immediately after the operation can be explained—this little slit was afterwards united and healed by means of two fine sutures. The patient is now very well, and she menstruates regularly through the vagina, which is certainly very much narrowed. She often comes here, and we have recently examined her condition.

“In the course of the summer we had many cases of fistules, and, on that account, I am most sorry that you did not visit us. I have cured six fistules, among them two lying very deep in the vagina, both being cured by the first operation. As yet I have made no use of your method.

“With the wish that you will at once write me whether you can come at any specified time, and in the hope of soon greeting you personally, I subscribe myself,

“Your obedient colleague,

“SIMON.

“Heidelberg, October 13th, 1875.”

“MY DEAR PROFESSOR SIMON,—Your favour of the 13th inst. was duly received.

“Your kind invitation to me to visit Heidelberg again for the purpose of operating with you in the hospital for vesico-vaginal fistule I fully appreciate, and I assure you I would come most willingly were it not that I am confined here with my children. I should like to take more time with you than it is possible for me to afford at present.

“There are two or three points, independent of the opera-

tion required for the little Russian patient, that are of the greatest practical importance to gynæcological surgeons, that I should like to discuss with you by the practical mode of dealing with the subject that we have already so satisfactorily inaugurated. I refer to cicatricial contractions of the vagina and to partial and complete obliteration of the same for the relief of incontinence of urine. I will, therefore, put the questions in the form of propositions and ask your answers to the same, believing that they will represent more exactly the state of the science in Europe at the present time than any information which might be obtained from any other surgeon known to me in connexion with the subject.

“1st. Is the existence of a cicatricial contraction or narrowing of the vagina an insurmountable obstacle to the closure of a fistule situated above it, and to the preservation of the functions of the organs involved? And, if so, why?”

“2nd. Is partial or complete obliteration of the vagina, with incomplete or perfect perversion of the functions of the organ, justifiable for the relief of incontinence of urine? And, if so, what are the principal conditions demanding one or the other of these procedures?”

“Of the first class of cases there is a pretty fair illustration to be found in the case of the young woman, Weick, who, you say, is cured of her incontinence of urine, and now menstruates regularly through the ‘small remaining vagina.’ The only objection that could be possibly urged against the result in this case is the existing vaginal atresia. In the General Hospital at Vienna a somewhat similar case, in the service of Professor Joseph Spaeth, was brought to my notice by his first assistant, Dr. Massara, during my visit there last spring. But here the atresia, which was almost complete, was situated higher up the vagina than in your case, and the fistule of small dimensions presented itself just above in the *bas fond* of the bladder. This atresia of the vagina was the result, as I was told, of typhus fever, and was found to be of a very resisting character. The fistule was produced accidentally in an unsuccessful attempt to overcome the atresia of the vagina, as I was informed by

Professor Karl von Braun, who had had the case under observation from time to time for four or five years. Another case in the same hospital, a Jewess from Hungary, in the service of Professor Braun, was presented to me for an examination and an opinion. The accompanying sketch will serve to give you an exact idea of the situation and size of the urethro-vesico-vaginal fistule, as well as of the recto-vaginal fistule, 12 centimetres from the anus. Here the cicatricial narrowing of the vagina, to the extent of about one-half of its calibre, existed just above the neck of the bladder, across the middle of the vesical fistule. Through the fistule the fundus of the bladder protruded, presenting itself at the vulva in the form of a tumour as large as a medium-sized orange. It was only possible to pull down the uterus by the aid of hooks, to the extent of placing the edges of the fistule not nearer than two centimetres from each other.

“ Now, as to the practicability of overcoming the atresia in the case of Weick, and giving her a useful vagina, before your operation for closure of the fistule, I think you told me that you did not believe it possible. I said that I thought it was feasible, and, at your request, made the first incisions and instituted the process of dilatation. The result, as you know, proved unsatisfactory, and you proceeded to perform your operation for the incontinence of urine, which you inform me was successful after the second sitting. In justice to myself, however, and to the procedure adopted in this case to overcome the obstacle in question, I should say that my efforts were not a fair test of what might be accomplished under such circumstances. Having lost many of my dilators before going to Heidelberg, I had to resort to expedients which were not commensurate with the ends to be accomplished. Since that time I have supplied myself with a good and suitable assortment of dilators, such as I am in the habit of using, and I am now prepared to deal with difficulties of the character in question in a more effective way. I am sure you would be interested in any efforts to give this young woman a useful vagina, and I doubt not a great deal toward it can yet be done by the employment of

the means indicated ; and, if I had five or six weeks' time to spare, I should like to undertake the operation in your presence. You will pardon me for saying that I believe this treatment to be of the greatest importance, and that I believe there is much to be learned by us all before we can hope to reach the highest limit of success in our operations either for incontinence of the urine or the fæces.

"In the second case cited, that of Dr. Massara, may I ask you what you would have advised under the circumstances ? Am I right in supposing that the condition described called for obliteration of the vagina below the seat of stricture ?

"The third case, that of Professor Braun, presented the unusual complication, as was stated, of recto-vaginal fistule, 12 centimetres from the anus, almost large enough to admit the point of the index finger. With the impossibility here of drawing the two sides of the vesical fistule together, and with the constant presence of fæces and urine in the vagina, may I again ask what you would have done ? Would it have been possible, under the circumstances, for you to close such a fæcal fistule by your procedure ? and, if not, would you consider obliteration of the vagina in the urethral portion justifiable ?

"The second class of cases, comprising those which are comparatively free from cicatrized narrowing, and demanding a complete obliteration of the vagina, is known to be large, and the range of the operation itself is also known to vary with the experience of the operator. It is proper to state that two important subdivisions of this class of cases have been made and fully described by you in several of your published articles under the respective designations of transverse and oblique obliteration of the vagina-kolpoplexis. To these I may add a third and a fourth, under the names of *felling and folding the edges of the fistule, with shortening of the anterior wall of the vagina.*

"Now, these expedients are all well known to surgeons, and are, at present, largely employed, even in cases where the uterus is *movable* and the *vaginal walls* are in a comparatively healthy condition—the adoption of this mode or that, varying, as I



have just stated, with the experience of the operator. You remarked to me during my visit at Heidelberg that you now did not have occasion to resort so often to obliteration as formerly, because your greater experience enabled you to overcome obstacles to the closure of the fistule itself, which previously had been thought insurmountable. So it is with all young and inexperienced operators now ; and, even in this advanced state of the science, the result is that we find many of them adopting some one of the expedients named, under circumstances which you and I would regard as unjustifiable. As to the exact extent to which you consider oblique or transverse obliteration of the vagina necessary at the present day, I confess myself ignorant ; but, as you have given the matter so much attention, I am sure there is no one better prepared to define it. Therefore, in the existing advanced state of your experience and knowledge, will you have the kindness to give me your views upon the subject ?

“ The case of the woman from Holland in your service, upon whom I operated last December, presented a funnel-shaped vesico-vaginal fistule, of no great size, it is true, but which was situated entirely to the right of the median line, with both edges deeply inverted, and the lower one firmly adhering to the posterior surface of the corresponding pubic bone. After your examination, you said that you had only seen one similar instance, and that occurred at Rostock, when you first applied the principle of oblique obliteration, and you remarked, further, that the same procedure was called for in this case. I may state that I operated successfully upon a similar case in the hospital at Vienna, in the service of Professor Karl Braun, in which it was previously thought that oblique obliteration, in accordance with your method, was necessary.

“ I suppose that, in the case of the little Russian patient, if the urethra is thought to be too short to justify an operation upon the fistule itself, you would advise transverse obliteration. Again, in uretero-vaginal fistule (*Harnleiter-Scheiden-fistel*), I believe you still practise perforation of the vesico-vaginal septum and then oblique obliteration. Besides this,

I infer that there are quite a number of deep and even small fistules (*im Gewölbe*) associated with immobility of the uterus, which call for oblique obliteration.

"The circumstances justifying transverse obliteration I think I understand very well.

"Of the other two expedients referred to—viz., felling and folding the edges of the fistule, I also understand the extent of their applicability. These two methods are very largely practised in America by Dr. Sims and his followers. They necessitate, as you know, the turning of one or both edges of the fistule into the bladder, with more or less shortening of the anterior wall of the vagina.

"Therefore, you will understand that my great object in asking you the foregoing questions is to ascertain, as nearly as possible, the conditions of the vagina and the peculiarities of the fistules which call for transverse and oblique obliteration. These procedures having been given to the profession by you, now about twenty years since, your present views as to their applicability and usefulness cannot be otherwise than of the highest interest to me, a co-labourer with you in the same branch of practice.

"Hoping to hear from you at your convenience, I remain, dear Doctor,

"Yours very truly,

"NATHAN BOZEMAN.\*

"Paris, October 19th, 1875."

(*To be continued.*)

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\* There were several reasons for my failure to return to Heidelberg in the summer of 1875, in order to continue the *concours* as agreed upon between Professor Simon and myself. The principal cause for foregoing my intention was a prolonged engagement with Professor Karl von Braun in the General Hospital at Vienna; subsequently my health was seriously impaired; obligations to my family likewise interposed hindrances; and perhaps I ought to add that Professor Simon had shown so much impatience when I was with him, in allowing the necessary time for carrying out my preparatory treatment, that I was not specially encouraged to overcome the difficulties in the way of resuming the work with him.

With reference to the publications in the *Swiss Chronicle* and in the *New York Medical Record*, which are cited by Professor Simon as evidence of my unfairness toward him in the discussion of the subject, I have only to say that the *Chronicle* article was furnished as a matter of news by a correspondent of that sheet, and totally without my knowledge or consent. As to the letter in the *Medical Record*, that was a private epistle, addressed to a medical friend in New York (not the editor of the journal), who, believing that it would be of general interest to the profession, assumed the responsibility of its publication.

## ON THE TREATMENT OF CHRONIC INFLAMMATION AND SIMPLE ULCERATION OF THE OS AND CERVIX UTERI.

By PERCY BOULTON, M.D.

Physician to the Samaritan Free Hospital for Women and Children.

FROM a very large experience of cases of chronic granular inflammation of the os and cervix uteri, I have formed very strong opinions in favour of the so-called local as contrasted with the constitutional treatment of such cases, and it is always a matter of wonder when I find any one thoroughly conversant with the subject, who expresses opinions in the other direction.

The general body of practitioners in this country under-rate the benefit of local treatment, and, in the face of constant failure, persist in treating these cases constitutionally, and thus it happens that a considerable number of patients that come to the specialist are what may be called the failures of the constitutional practitioners.

The patients complain that for months, or perhaps years, they have suffered from weariness, debility, backache, and discomfort, and have taken tonics *ad nauseam* without any apparent results. Some of them have undergone a vaginal examination, and been perhaps ordered a lotion with which they have squirted themselves daily (probably with a small glass syringe) without benefit.

Knowing the utter uselessness of these things, and the certainty of a speedy cure by well-directed local treatment, I express myself strongly on the point. I do not mean that I never prescribe medicines in these affections, but I mean to say that whereas constitutional treatment alone rarely succeeds, local treatment properly carried out always does.

At the Samaritan Hospital, any qualified practitioner is at liberty to see the cases and watch the cures, and very few cases run over three months, or about twelve examinations. I am at present treating two private patients, who spent all last autumn at Kreuznach and were drenched from

morning to night with foul-tasting waters, ascending douches, and baths without benefit, and I have seen dozens of such cases.

I am somewhat surprised therefore to meet with the following sentence in a book on "The Health Resorts of Europe," recently published by so good an authority as Dr. Madden, of Dublin:—"With regard to active local treatment in ordinary cases of chronic inflammation, and simple ulceration of the os and cervix uteri, if we trusted more to constitutional remedies, and above all to the judicious employment of certain mineral waters in such cases, I verily believe that in many instances our patients would get well sooner than they do when the local irritation is increased, *secundum artem*, by frequent examinations and the repeated application of escharotics."

When the local irritation is increased by the application of escharotics, it is not the local treatment that is wrong, but the choice of escharotic. Caustics when too strong or too frequently applied do increase the local irritation, and a great deal of success depends on the proper selection of remedies.

What will cure the poor will cure the rich, and the former could not afford the mineral-water treatment, but they do not require it if, as I hold, local treatment at home is sufficient.

The difficulty is with virgins, when it of course is not desirable that local treatment should be carried out if anything else will succeed.

Luckily, inflammation and ulceration of the womb most frequently come on after a confinement or miscarriage, for arrest of involution of the puerperal uterus is the chief cause of these disorders, so that we need have no scruples about using a speculum; but when it occurs otherwise it is better, at first, at any rate, to leave the womb alone, and give saline purgatives and bromide of potassium, or perchloride of mercury and bark, as the case may be, though the result is generally unsatisfactory; but these conditions of the womb are luckily not dangerous to life, and a virgin should suffer



long and much rather than lose her virginity in so unsatisfactory a manner. In many cases, however, the hymen will permit a careful digital examination without incurring damage, and an educated finger is almost as good as an eye in these conditions. The hard sulphate of zinc points may be passed into the cervical canal without a speculum, and are a useful application. Leeches may be applied to the vulva or rectum ; and although the best of cases are unsatisfactory when treated without thorough applications to the womb by means of a speculum, compared with the capital results so obtained, we may often succeed in giving relief by these means, if we do not positively effect a cure.

Were any other part of the body in a state of ulceration, common sense would suggest accurately applied remedies to the diseased part, and judicious choice of them, according to the stage of the disease.

There is generally a good deal of very tenacious white-of-egg discharge, which requires wiping thoroughly away before any application is made. Any one that knows the very obstinate way in which this clings to the cervix must be aware that no ordinary douche would remove it, and therefore no lotion could reach the diseased surface.

This discharge is often a cause of sterility, by corking up, as it were, the uterus.

As we are speaking of chronic cases, the time will generally have passed for leeching or scarification, which in their proper places are most valuable remedies, especially scarification, if properly and thoroughly done. When the uterus is highly congested and angry, some four or six punctures half an inch deep into the cervix around the os uteri do wonders. In a few minutes one or two ounces of blood may be safely taken from the engorged womb with splendid results.

The lancet must always be pushed in parallel with the cervical canal. I have never known it to do harm, and in proper cases always good.

The glycerine tampon or plug of cotton wool applied to the os uteri through a speculum is at times very useful.

It sets up a copious serous discharge, which relieves the uterus considerably.

In very anæmic patients it is occasionally a capital substitute for local bleeding in congestive states of the womb.

Strong caustics often do more harm than good. Even nitric acid and acid nitrate of mercury—two most excellent and valuable applications—should be used with some caution.

The indications for these remedies are a very patulous os uteri and a chronic inflammatory state.

In sub-involution they act admirably, but I have known both set up sympathetic dysentery, and consequently I use them with caution in our outdoor department, where, as a rule, the patients have to walk home.

Both these remedies are more potent than nitrate of silver, and possibly effect a speedier cure with fewer applications, but they often cause permanent contraction of the os uteri, and for this reason I prefer nitrate of silver as a general application, reserving the two former for occasional use only so long as the os is large and gaping. In cases where there is an hypertrophied and indurated lip, it is generally necessary to make an issue before sufficient interstitial absorption can be aroused to effect a cure.

Potassa c. calce, or stick caustic potash, are neither so safe or handy for this purpose as the new Paquelin's thermo-cautery, with which an eschar can be speedily made of the desired extent without any of the chances of vaginal excoriation, which is a possible contingency, unless the vagina is carefully guarded with cotton wool dipped in vinegar when potassa is used. In a case of simple granular inflammation these things are not necessary.

After wiping the excoriated surface clean with cotton wool, an application once a week of solid nitrate of silver, or Churchill's strong tincture of iodine, or glycerine of carbolic acid, double the Pharmacopœial strength, will soon promote healing action. I am sure it is a good plan to vary the application, and the three above mentioned are my favourites. Stronger remedies are only necessary in the worst conditions, and as the cure proceeds I use milder means, such as a

solution of nitrate of silver ʒj to water ʒj. After the whole surface is covered with mucous membrane it oftens happens that there is a persistent discharge from the mucous follicles and glands within the cervix. During the diseased state they are excited to an over-active condition which is difficult to check, in this respect being somewhat like a gleet. Solid perchloride of iron ʒj to water ʒj, is a capital remedy for this state. Such are the local remedies which I think are capable of curing almost any case of chronic metritis.

That certain constitutional remedies are of great value I am also convinced, but it is the local rather than the constitutional remedies that are all-important, for if the local treatment is neglected the cases always get worse, while so long as the applications are regularly made they improve.

Medicinally, saline purgatives suit the plethoric, and help to relieve the pelvic bloodvessels, and constipation should always be avoided in this condition. Some of the mineral waters are therefore useful adjuncts, but cannot be looked upon as absolutely curative.

In the very anæmic, iron may be given, but, as a rule, both iron and nux vomica are rather too exciting for these cases.

A very favourite mixture with me is—

R Liq. hydrarg. perchloridi, ʒss  
Infusi cinchonæ, ʒj, ter die.

Cod-liver oil is sometimes valuable by improving nutrition generally.

In most hyperæmic conditions of the womb bromide of potassium, ergot, and occasionally cannabis indica, are the most valuable remedies.

When the discharge is scanty and thin, vaginal injections are not to be despised. A tablespoonful of liquor plumbi subacetatis in a pint of tepid water being perhaps for all purposes the best, and a Kennedy's ball syphon syringe is the instrument I always recommend.

Medicated pessaries are dirty and somewhat expensive remedies, but I think I have seen benefit from ten grains of iodide of lead used every night in this form, and when the womb is irritable, the addition of a sedative is often an

advantage. When the uterus is large and heavy from chronic engorgement, and the ligaments relaxed so that the uterus falls low, the vagina being also lax and large, tannic acid in the form of pessary is of service.

Rest in the recumbent posture should be always as far as possible enjoined, while physiological rest is to be also commended. Baths are useful in all inflammatory conditions of the womb, but a mention of them must suffice to terminate this sketch of uterine therapeutics.

Such is the kind of treatment of these cases that I find entirely satisfactory. I have the utmost confidence in the sufficiency of well-directed local treatment, especially if assisted by the judicious use of such constitutional remedies as I have named. I am equally satisfied that the treatment by medicines or mineral waters will prove unsatisfactory if the local treatment is undertaken in a half-hearted and unsystematic manner.

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## Abstracts of Societies' Proceedings.

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### OBSTETRICAL SOCIETY OF LONDON.

*Meeting, Wednesday, July 4th, 1877.*

CHARLES WEST, M.D., *President, in the Chair.*

Dr. GALABIN showed a uterus in the cavity of which suppuration had occurred from occlusion of the cervix due to cancer commencing near the internal os, and not obviously affecting the external part of the cervix. The patient was an old woman, and had had slight hæmorrhage six months previously. Severe symptoms had come on rather suddenly with retention of urine, and almost complete intestinal obstruction. A globular tumour completely filled the cavity of the pelvis, almost pressing on the perineum, and extended half way to the umbilicus. The cervix was pushed upward and forward, and the vagina was so flattened that there was no space to use the sound. After consultation with Dr. Braxton Hicks, it was thought that the tumour was probably ovarian, and attempts were made to push it up by the hand, and afterwards by air-ball pessaries, but without any



effect. It was then punctured by a small trocar, and found to contain pus, and a drainage tube was afterwards inserted. The patient eventually died with symptoms of general peritonitis. The tumour in the pelvis proved to be the retroflexed fundus, which was only partially adherent in Douglas's fossa.

The PRESIDENT asked whether the cavity of the uterus were not affected by cancer as well as the cervix, and requested Dr. Roper to examine the specimen with Dr. Galabin.

Dr. W. SQUIRE, for Mr. Buckell, of Winchester, read the notes of, and showed the viscera from a case in which Cæsarean section was performed from twenty to thirty minutes after death, and the child saved. The patient was twenty-seven years old, and far advanced in pregnancy. She was taken suddenly ill in the public street, and Mr. Buckell, on his arrival, found her dead. After ten minutes spent in efforts at resuscitation, he examined per vaginam and found the os dilated to the size of a florin. The fœtal heart was heard. Cæsarean section was then performed, and occupied about three minutes. The child's heart was beating feebly, and, after about an hour's artificial respiration, it was restored. The mother's viscera were found to be reversed, including the liver, spleen, and colon. The left carotid and subclavian came off separately, and the aorta was dilated, producing valvular insufficiency. She had not been left-handed.

Dr. AVELING said that writers generally laid it down that the child might be saved up to one hour after the mother's death.

The PRESIDENT thought that in most cases the child was dead within a few minutes.

Dr. PLAYFAIR had only seen one case. A woman died in the street, and a living child was extracted after about half an hour. The house physician who operated was so gratified with the result that he adopted the child.

Dr. ROUTH said that if a child were put under water, even after its birth, it could be resuscitated. So it could be also after the funis had ceased for some time to pulsate. He had performed post-mortem Cæsarean section immediately after death from apoplexy, but the child was dead. In such cases it was killed by the poisoned blood, and therefore much depended on the cause of the mother's death.

Dr. DALY had operated twenty minutes after death from rupture of the uterus, a large rent being found at the back of that organ. The child was not saved.

Dr. SAVAGE asked whether Dr. Routh had verified by experiment what he asserted, that a new-born child could be resuscitated after being put under water.

Dr. J. WILLIAMS asked what was the cause of the apoplexy in Dr. Routh's case.

Dr. ROUTH said that it was from brain disease. The poison he referred to was that of the carbonised blood.

Dr. PLAYFAIR showed a specimen of elephantiasis of the vulva removed by him. It began seven years ago in the right labium, and afterwards involved the left. It formed a pendulous warty growth, involving the whole of the vestibule. The corpora cavernosa of the clitoris were much enlarged. The tumour was very vascular. It was amputated by the knife, and the vessels tied. There was some suspicion of congenital syphilis in a child, but no history of it as regarded the mother. It was a very rare condition in England, but analogous to scrotal tumours which he had seen in Bengal. In India it was usual to suspend the tumour first, and then remove by the knife. Five or six arteries were easily secured afterwards.

Dr. SQUIRE said that at the Marylebone Infirmary he had had a patient with such a tumour on one side who was free from any syphilitic taint.

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*Additional Cases of Ovariectomy performed during Pregnancy.*

By T. SPENCER WELLS, F.R.C.S.

Of nine cases in which the author had performed the operation six had been already published, four in the *Obstetrical Transactions* (vols. xi. and xiii.), one in his work on *Ovarian Tumours*, and one recently by Dr. Kidd (*OBSTETRICAL JOURNAL*, vol. iv. p. 621). Details were now given of three additional cases.

CASE VI.—The patient was thirty-two years old, married, and with seven children. Abdominal distension was very great. She was tapped, but a few ounces only of thick colloid matter would pass through the canula. Oozing continued, but was stopped by passing a pin through the whole thickness of the abdominal wall. Ovariectomy was then performed at about the completion of the sixth month, as was supposed. The omentum only was adherent. A clot was found at the site of the tapping. A clamp was applied at first, but was found so to twist the uterus that it was removed, and the pedicle secured by ligature, and dropped. Twenty-four hours after the operation labour came on, and a seven-months' child was quickly born, and lived three hours. On the third day there were symptoms of peritonitis with tympanitic distension. On the sixth day free discharge took place from the upper part of the wound, after which convalescence was established.

CASE VII.—(Already reported by Dr. Kidd to the *Obstetrical Society of Dublin*).—At the fifth month of pregnancy there was immense distension, and it was a question whether to induce premature labour. It was decided to tap, and five or six quarts of fluid were drawn off, mostly from the peritoneal cavity. Four cysts were opened at this time. Relief followed, and the patient was able to take a six hours' journey to Dublin, but the cyst rapidly refilled. When he saw her, she had a feeble pulse of from 140 to 150; there

was vomiting, and other signs of intestinal obstruction. He tapped to gain time, and removed much viscid fluid from the peritoneal cavity. The next day ovariectomy was performed, and the weight of the tumour, with the fluid removed, was 40 lbs. The pedicle and some adherent omentum were tied, and the ligature cut short; some lymph was also wiped away from the surface of the peritoneum. Four hours after labour pains came on, and a five-months' foetus was expelled. Serum afterwards escaped from the wound, and death took place on the seventh day. In a similar case in future he would leave in a drainage tube.

CASE VIII.—The patient came under observation in July, 1876, having an ovarian tumour, and six weeks amenorrhœa. She was forty-one years old, and had six children, the youngest eight years old. She had had an abortion in 1875, and three or four previously. In September relief appeared to be called for, and five and a half pints of viscid ovarian fluid were removed by tapping. The puncture kept open for three weeks, and some symptoms of peritonitis appeared. Ovariectomy was performed on October 12th, the uterus then reaching half way to the umbilicus. The cyst was adherent at the site of the puncture, but was easily drawn out. A long pedicle was secured with a clamp. The other ovary was healthy. During the operation much difficulty was found in preventing protrusion of the intestines, but convalescence afterwards was uninterrupted.

CASE IX.—The patient was twenty-seven years old, had been married four years, and, when first seen, appeared to be about three months pregnant, her suffering having greatly increased since pregnancy occurred. On December 5th, 1876, the uterus was found to reach within three inches of the umbilicus. She thought she had quickened ten or twelve days before. Ovariectomy was performed on December 11th, a thin cyst was drawn out, some adhesions posteriorly were tied, and the pedicle was also tied. The other ovary was found healthy. The cyst was dermoid, and weighed 2 lbs. 6 ozs. Febrile symptoms followed the operation up to the fifteenth day, accompanied by albuminuria. They were treated by the ice-water cap, with full doses of opium. The symptoms subsided, but miscarriage occurred about six weeks after the operation. The child was born alive: it was thirteen inches long, and appeared to be of about 28 weeks' development. The mother afterwards recovered well.

Since eight of the mothers out of nine recovered, the author hoped that the facts now recorded would help to form professional opinion as to the relative advantage of ovariectomy as compared with the induction of premature labour in such cases. The following is a tabular statement of the whole nine cases in which the author performed ovariectomy during pregnancy:—

*Cases of Ovariectomy during Pregnancy.*

No.	Medical Attendant	Age of Patient	Period of Pregnancy	Date of Ovariectomy	Weight of Tumour	Result to Mother	Result to Child.	Subsequent History.
1	Mr. Cook, Clovelly	24	4th to 5th month	Aug. 1865	28 lbs.	Recovery	Fœtus removed at same time.	Well in 1876.
2	Mr. Bateman, Islington	36	3rd month	Aug. 1869	37 lbs.	Recovery	Alive ; Natural labour Feb. 1870.	Died of cancer of uterus, March, 1871.
3	Dr. Goddard, Pentonville	28	3rd month	Dec. 1870	15 lbs.	Recovery	Alive ; Natural labour July, 1871.	Other children born, May, 1873, and August, 1876.
4	Dr. Ross, Bloomsbury	38	3rd month	May, 1871	34 lbs.	Recovery	Alive ; Natural labour Dec. 1871.	Another child born, Jan. 7, 1877.
5	Dr. Moore, Ipswich	29	4th month	March, 1872	10 lbs.	Recovery	Alive ; Natural labour May, 1872.	Another child born, May, 1873.
6	Mr. Coleman, Woolwich	32	7th month	Aug. 1872	26 lbs.	Recovery	Seven months' child born day after operation.	Well, June, 1877. Living children born, Dec. 1873 and March, 1876. Another expected July, 1877.
7	Dr. Kidd, Dublin	38	6th month	March, 1876	40 lbs.	Died seven days after	Fœtus expelled six hours after operation.	
8	Dr. Roberts, Cheshunt	41	4th month	Oct. 1876	7 lbs.	Recovery	Child born April, 1877 ; Labour natural.	Well, June, 1877.
9	Surgeon-Major Perry	27	7th month	Dec. 1876	12 lbs.	Recovery	Child born 25 days after.	Well, May, 1877 ; Menstruation regular.



Dr. PLAYFAIR asked what Mr. Spencer Wells's experience had been of other modes of treatment, such as tapping alone, or induction of premature labour. His own opinion was that ovariectomy was probably the treatment most likely to be successful. The results were very unfavourable when patients went on to term even when the ovarian tumour was small. Of thirteen such cases, collected by him in a former paper, seven had proved fatal. In one case, in consultation with Mr. Wells, he had induced abortion at an early period. Death followed, probably from some low form of cyst inflammation. He now regretted that ovariectomy had not been performed.

Dr. MURRAY said that if the tumours contained simply fluid, without any solid parts, tapping would probably prove sufficient. He mentioned a case in which tapping was performed at the fifth or sixth month of pregnancy, and labour was induced at seven and a half months. Three months after delivery ovariectomy was performed. The patient recovered, and had had other children since. It was to be noticed that miscarriage occurred soon after the operation in three or four of Mr. Wells's cases. He would himself prefer to remove the foetus first, allowing the pregnancy to go on, if possible, up to seven and a half months.

The PRESIDENT said that the paper tended to show the comparative safety of ovariectomy during pregnancy. It was probably desirable to perform it at an early stage. It was common with such a complication for irritation to be set up, and after tapping the patient might sink. If ovariectomy were not practicable it would probably be better to induce premature labour rather than to tap. He would hail the facts recorded by Mr. Wells, and urge the early performance of ovariectomy, whether the tumour were solid or fluid. He would now dissuade from allowing the pregnancy to proceed without interference, or from inducing premature labour, if ovariectomy were feasible.

Mr. LAWSON TAIT said that Dr. Playfair had given them a valuable lesson as to the risk from small ovarian tumours in pregnancy, but his own experience had been different. He only saw two or three cases of labour in a year, but almost all of them were cases complicated by tumours. He had had at least four cases, if not five, of small ovarian tumours in front of the head. In all of them the administration of chloroform, and pushing up the tumour, without any tapping, had been quite successful. The paper of Mr. Wells was conclusive of the expediency of the operation he recommended. He had himself had one case, and, although the result was unfortunate, this did not prove anything the other way. The patient was in the seventh or eighth month of her ninth pregnancy. In her last labour the cyst had ruptured, and she had a narrow escape with her life. He was called in to decide whether it was advisable to interfere. He had a great prejudice against premature labour, having had serious misfortunes with it. He therefore decided upon ovariectomy, although it was believed that the tumour was adherent. This

proved to be the case, but the pedicle was long, and secured by a clamp. The patient went on well till the sixth or seventh day, when labour came on, and the foetus was rapidly expelled. She began to sink from that time. At the autopsy the only condition found was a gangrenous state of the pedicle up to the cornu of the uterus. Probably there had been embolic interference with the circulation in it. The miscarriage proved to be the last straw, but he believed that the state of the pedicle was primary to it. In five or six cases he had tapped during pregnancy with a good result, and in three of them ovariectomy had been performed after delivery. He had never induced premature labour, and would prefer ovariectomy to that operation, but would tap if that measure seemed likely to be sufficient. As a rule, he would never perform any operation on a pregnant woman if he could help it.

Dr. CARTER had seen two cases of pregnancy with ovarian tumours. The first patient miscarried once, when pregnant three months. She became again pregnant, and at seven months it became a question what should be done for her relief. Ovariectomy was resolved on, but the husband refused to consent to it, and removed his wife from the hospital. The result was that she was delivered normally at full term. In the second case, the tumour was first noticed about the commencement of pregnancy, and in this also normal delivery took place at full term. Both children were living and healthy. He asked Mr. Wells what other cases he had been consulted about, in which ovariectomy had not been performed, and what the results were.

Dr. GALABIN asked whether Mr. Wells attached any importance, in making the choice of operation, to the stage of pregnancy reached. Of the cases tabulated, miscarriage occurred in all in which ovariectomy had been performed later than about the fourth month of pregnancy, and in none of the others. Mr. Lawson Tait's case, at the sixth or seventh month, was followed by miscarriage and death; and in a case recently published by Dr. Wilhelm Baum, in which ovariectomy was performed antiseptically at the fifth or sixth month, miscarriage followed, and the patient had a very narrow escape with her life. It would seem therefore that miscarriage might be expected after ovariectomy in the later stages of pregnancy, and the supervention of the puerperal state could not but add to the danger. If this rule were confirmed, it would seem desirable to choose induction of premature labour in a late stage of pregnancy, and not to delay ovariectomy, if indicated in the earlier months.

Dr. HEYWOOD SMITH asked whether the rate of growth of the tumour had any influence on Mr. Wells's decision. If the cyst refilled rapidly after tapping the difficulty of choosing the operation might again occur before delivery, or during the puerperal state, which must be regarded as lasting for two months afterwards. There seemed to be less risk with a fair-sized tumour than with a small one at full term, since the latter was more liable to become incarcerated

in front of the head, or suffer injury from pressure. According to the evidence adduced by Mr. Wells, ovariectomy would seem to be the preferable operation, even within the last three months of pregnancy. Tapping at such a time was fraught with great danger to the pregnant woman. He mentioned a case in which tapping had been performed before pregnancy, and again at the sixth or seventh month. Ovariectomy was performed two or three months after delivery, with a fatal result.

Dr. ROUTH said that, at first sight, one might be inclined to say that the plan advocated by Mr. Wells was the correct one, but this would be a hasty conclusion. There might be many other cases of similar complications which ended satisfactorily without the performance of ovariectomy during pregnancy. In one case he had induced labour at  $7\frac{1}{2}$  months, and the child was born alive, although it was not reared. Ovariectomy was performed some time after delivery, with a fatal result. He thought that a much larger number of cases was required to decide the question, but that, according to our present knowledge, the whole matter depended upon the size and rate of growth of the tumour. If the growth were rapid, ovariectomy should be performed. He thought that the fear commonly felt of performing operations during pregnancy was exaggerated.

Dr. PLAYFAIR said that the thirteen cases he had referred to were all cases of small tumours jammed down in the pelvis, which had not been suspected during pregnancy. All the patients recovered in whom the tumours had been tapped, but the mortality was much greater when the tumour had been pushed up without tapping. The right practice, therefore, was to tap first.

Mr. LAWSON TAIT said that the first four of his cases were small tumours, and did not bear upon the treatment of larger ones. Nor did three others, in which tapping was performed during pregnancy. No one would choose ovariectomy in that condition, if tapping were likely to tide over the crisis. In all his cases the tumours had been diagnosed before labour. He had found such good results from pushing the tumours up, that he was not at all inclined to accept Dr. Playfair's dictum.

Dr. CHAMBERS mentioned the case of a lady over whom a consultation was held at the fourth month of pregnancy. A leading accoucheur objected to ovariectomy, and eighteen pints of fluid were therefore removed by tapping. Four days after, miscarriage took place. She went on well for some weeks, but a low form of peritonitis then set in, with probable suppuration of the cyst, and it became imperative to do something. Ovariectomy was decided on, and was performed with ease in a few minutes, but the cyst was found full of pus, and the peritoneum congested. She did well for forty-eight hours, but then collapse came on, and death in twelve hours more. If ovariectomy had been performed at first, she would probably have recovered. If a cyst were rapidly increasing during pregnancy, it should be removed as early as possible. He asked Mr. Wells what



proportion the nine cases recorded bore to all the cases of pregnancy complicated by ovarian tumours which he had seen, and what were the exact indications for operation in them; also whether any inconvenience arose as to the sutures in the cases in which miscarriage followed the operation.

Dr. SAVAGE said that we had had histories of cases in which patients with enormous ovarian tumours went to full term, and did perfectly well. On the other hand were the facts adduced by Mr. Spencer Wells. He should like to have some settled basis attained. The facts recorded were of the most opposite significance, and the embarrassment upon the subject was indescribable.

Dr. ROPER mentioned a case, complicated by an ovarian tumour as large as a foetal head, in which he induced labour at the seventh month. The child was alive, and the patient did well. She had since had several living children at full term, the tumour remaining unaltered.

Mr. SCOTT mentioned a case in which he had performed ovariectomy, and found an ovarian tumour on one side and a fibroid on the other. The patient had gone through two pregnancies with perfect safety while the tumours existed. The ovarian tumour was high up, and had a long pedicle. If the pedicle were short, there would be much more danger of harm resulting from labour, if the tumour were let alone.

Mr. SPENCER WELLS, in reply, said that the anxious case, already mentioned, which he had seen with Dr. Playfair, showed the difficulties which arose in practice, and defied the laying down of rules. The patient often would not have the treatment which is recommended. The tumour in that case was a small one, and there was a doubt whether it was uterine or ovarian. The first conclusion was to wait, as it did not appear to be growing. Then came great suffering, and the friends refused ovariectomy, and preferred the induction of premature labour, which was carried out. Septicæmia and uterine phlebitis came on, and the patient died. The friends have an undoubted right to share in the discussion, and it is often advisable and necessary to let them share the responsibility of the decision. The question of tapping depended on whether the cyst were single or compound. If it were single, most would prefer tapping to ovariectomy. The tumours he had removed in pregnancy were not all solid ones, and the weights given included the fluid contents. The proposal to remove the foetus first seemed to him dangerous. If the patient were put into the puerperal state, the operation, if performed afterwards, would be very hazardous. Mr. Lawson Tait's cases of small tumours were hardly in point. The question of tiding over the danger by tapping was important, but was often decided by the patient herself. The facts adduced to show that some cases may go on without bad result to full term were very important. He had himself related one in which five successive pregnancies took place. The patient was the servant of an ovariectomist, and knew something



about his results. But he thought such cases were very unfrequent, and could not form any guide for our treatment. As to the proportion of cases he had seen in which ovariectomy was not performed, he could not now state it exactly, but there were not more than ten or twelve. The conclusion he arrived at from them was that, as a rule, the results were not so good as with ovariectomy performed tolerably early. As to the influence of the stage of pregnancy reached, he thought the cases were as yet hardly numerous enough for a positive conclusion, but he called attention to one in which ovariectomy was performed at the seventh month, and miscarriage did not occur till twenty-five days after. But the evidence was rather in favour of performing the operation early. The rate of growth was no doubt important as influencing the decision. If a growing tumour were multilocular, either the tumour or the foetus must be removed. The puerperal state was much less favourable to operations than pregnancy. Pregnant patients did as well after operations as any others. In answer to Dr. Savage's amusing remarks he hoped that the discussion would lead to some results, and not to confusion.

Dr. SAVAGE asked Mr. Wells for a categorical answer to this question. If a patient during pregnancy had a solid or fluid ovarian tumour without much suffering, would he operate at all, and, if so, would he choose ovariectomy?

Mr. SPENCER WELLS replied that, if the patient were not suffering, he would undoubtedly leave her alone.

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## OBSTETRICAL SOCIETY OF DUBLIN.

*Meeting, February 10th, 1877.*

THOMAS DARBY, F.R.C.S.I., *President, in the Chair.*

*Notes of a Case of Extra-Uterine Fœtation.*

By RICHARD D. PUREFOY, M.B. Dub.

As cases of extra-uterine fœtation are of infrequent occurrence, and generally present some points of difficulty in diagnosis and treatment, I have ventured to bring before you brief notes of a case which has recently come under my observation. I am indebted to my friend and late colleague, Dr. Macan, for the early history of the patient, which is as follows:—In March, 1873, the patient, a strong, healthy, married woman, who had previously enjoyed good health and regular menstruation, believed herself to be pregnant, as menstruation ceased and abdominal enlargement ensued, which, however, was most marked on the left side. Early in May, and again in June, two severe attacks of pain were experienced, passing down the back of the thigh, in the track of the sciatic nerve. Early in August a third attack of pain took place, and lasted for three weeks, very intense in

character, attended with much bearing down, constant yellow discharge per vaginam, frequent micturition, and constipation. During the two months preceding this, marked enlargement of the tumour had taken place, but, at the same time, the patient had lost flesh, and suffered much from thirst and swelling of the feet.

Shortly after this third attack, just described, and about five months from the date of the last menstruation, a vaginal examination was made, when the uterus was found to be very low in the pelvis, the os large, and the cervix somewhat shortened, and in the posterior *cul-de-sac* a firmly fixed tumour, about the size of a child's head. The sound passed into the uterus to the depth of five and a half inches, and could be felt through the abdominal walls above the pubis. The abdomen was swollen, and the left hypogastric region occupied by a hard, movable tumour, which reached an inch above the umbilicus, and seemed to be connected with the uterus, though it lay quite to the left of the sound, when in the uterine cavity. At this time the vaginal discharge had ceased, and the patient complained only of severe pain in the side, until the following November, when an attack simulating diarrhoea came on, and at the same time foetal bones, of which I have obtained one, began to escape per vaginam—and this continued for more than a year. At the present date—that is, nearly four years from the occurrence just described—the patient enjoys excellent health, and the only local evidence of what she has undergone is a small cicatrix in the vagina, at the left side of the cervix, and some lateral deflexion of the uterus to the same side. Since observations on the lower animals and on man have demonstrated the presence of spermatozoa on the ovaries and in the whole pelvic portion of the abdominal cavity, we must admit the possibility of extra-uterine foetation; and considering the numerous circumstances which, singly or combined, may interfere with the normal passage of the ovum into the uterus, we may rather be surprised that cases of it are so rare. For instance, when the serum drains slowly away from a small opening in the Graafian follicle, the ovum may remain behind, and be fecundated there—or the follicle may rupture at a spot distant from the end of the tube, or an abnormal movement of the intestines may drive the ovum from its right course. Again, occlusion of the tube, or destruction of its cilia, may have been caused by catarrh, while an attack of perimetritis is frequently followed by a flexure or constriction of a tube which greatly impedes conception. Clinical observation has shown that a large number of extra-uterine pregnancies occurred in primiparæ, who had lived for some years in sterile marriage, and in many pluriparæ after a long pause in child-bearing.

I propose to make a few brief remarks on the course and termination of the three principal forms of extra-uterine pregnancy—viz., tubal, ovarian, and abdominal, in the order in which I have named them.

Examples of tubal pregnancy occur when the ovum is arrested in the Fallopian tube, from some of the diseased conditions just men-

tioned, and sometimes from the presence of a polypus at the uterine extremity of the tube, as in Beck's case; or as in the very rare case mentioned by Hässfinther, an ovum which has normally entered the uterine cavity may pass thence into a Fallopian tube, and there develop.

Coincident with the development of the ovum, changes in the tubal mucous membrane take place, analogous to, or—according to Schroeder—identical with those observed in the uterine mucous membrane in normal gestation, though Playfair denies that any decidua reflexa is formed.

Mr. Holmes, in Vol. XLIII. of "Medico-Chirurgical Transactions," gives an account of a dissection of a recent case of tubal pregnancy, in which he found a third membrane surrounding the ovum, distinct from the chorion and amnion, separable into two layers, and not forming part of the wall of the tube. The distension of the tube, due to the growth of the ovum, generally obliterates both its extremities, particularly that corresponding to the uterus, and its muscular fibres are so forced apart that the foetal sac consists only of peritoneum and tubal mucous membrane.

At the same time important changes take place in the uterus. The whole organ hypertrophies, and its mucous membrane is converted into a true decidua. Its occasional absence at post-mortem examinations is probably due to the fact that it is sometimes thrown off *en masse* during the hæmorrhages which often precede the fatal issue of such cases. The most frequent termination of tubal pregnancy is in rupture of the sac before the fifth month, generally at its thinnest part, but sometimes at the placental insertion; and death mostly follows, either from profuse internal hæmorrhage at the time, or from the consequent peritonitis. However, after its escape into the abdominal cavity the ovum may be encapsuled, and if at an early period of development it may, to a great extent, be reabsorbed; or, if the embryo be older, it may undergo the changes which will be mentioned when speaking of abdominal pregnancy. Occasionally, as in the cases recorded in *The Lancet* of 1861, and *British Medical Journal* of 1859, tubal pregnancy may be prolonged nearly to full term. Mr. Hutchinson, in 1873, recorded a case of what proved to be Fallopian gestation, prolonged to full term, and simulating ovarian dropsy so closely that the abdominal tumour was punctured, unfortunately with a fatal result. Undoubtedly the most favourable termination of tubal pregnancy is when the embryo perishes early, and recovery ensues without any rupture. Various measures have been taken to secure this end, which will be mentioned when speaking of treatment. With regard to diagnosis, Schroeder has well said that it is generally easy in the first months to make sure of an extra-uterine tumour, while the diagnosis of a pregnancy is frequently involved in difficulty; at a later period pregnancy can easily be diagnosed, but to show that the foetus is outside the uterus may be very difficult. In the first place it is to be observed that all the usual sympathetic



disturbances of pregnancy exist—the breasts enlarge, the areolæ darken, and morning sickness is present. Menstruation is generally arrested, but there are often irregular hæmorrhages, especially before rupture takes place. Barnes attributes these to partial detachment of the chorion villi, produced by the ovum growing out of proportion to the tube in which it is contained, and that they are thus exactly similar in their mode of occurrence to the hæmorrhages which occur in cases of placenta prævia in the early months. If, under these circumstances, a careful bi-manual examination reveals the presence of an elastic, sensitive tumour on one side of the uterus, and that the latter is moderately enlarged, the case is probably one of extra-uterine pregnancy; the use of the uterine sound in very skilful hands may demonstrate that the uterus is empty, and this will also help us. We may be quite certain if hard and movable parts can be felt in the extra-uterine tumour, and if the fluid obtained from it by puncture have the usual characters of liquor amnii.\* When by these various means of examination a satisfactory diagnosis can be arrived at, and the sac is accessible from the vagina, rectum, or abdominal walls, we are justified in puncturing it with a fine trocar, allowing the liquor amnii to drain off, and this can generally be done most readily through the vagina. The foetus then dies, and, according to the time of its development, is either reabsorbed or converted into a lithopædion. Dr. Bachetti has successfully used the continuous current to obtain the same result. Recently Dr. Thomas, of New York, opened the cyst through the vagina by a platinum knife, heated by a galvano-caustic battery, and, through the opening thus obtained, removed the foetus. In attempting the removal of the placenta violent hæmorrhage ensued, requiring the use of an astringent injection to stop it; the patient made a good recovery.

More frequently our aid is sought when rupture has taken place, and our efforts must then be directed to stop the hæmorrhage, a matter of no little difficulty. Ice applied to the abdomen, and, if possible, compression of the abdominal aorta, are the most efficacious means. If assistance be at hand immediately after the rupture, and if the ovum be of large size, perhaps the most successful treatment would be the Cæsarean section in order to stop the hæmorrhage, remove the foetus, and, if possible, the whole sac which contains it. It is supposed by Bernutz, and his opinion is shared by Barnes, that rupture which does not prove fatal is probably not very rare in the

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\* Dr. Barnes says three conditions may render diagnosis difficult—retroversion of the gravid womb, small ovarian cyst, and retro-uterine hæmatocele. The first and third of these conditions will commonly cause retention of urine, which is not common in tubal gestation. In the first there is almost always a history of pregnancy and the signs of it. In the third there also may be a history of pregnancy. Retroversion may be distinguished by tracing the rounded body of the uterus by rectal and vaginal touch. In hæmatocele the effusion of blood follows severe symptoms suddenly produced, and the uterus is much less developed than in tubal pregnancy. A small ovarian cyst may cause retention of urine, but seldom interferes with menstruation.



first few days of extra-uterine gestation, and that it is not an uncommon cause of certain forms of pelvic hæmatocele. I had recently under my care a young unmarried woman suffering from uterine hæmorrhage, which followed some unusual exertions. The local signs of pelvic hæmatocele were present, and also such mammary development as strongly suggested pregnancy.

A variety of tubal gestation known as tubo-uterine, or interstitial, presents some points of difference from the form just described. Here the ovum develops in a portion of the tube already continuous with the uterine substance. In most such cases rupture occurs during the first three months. After rupture of the tubal mucous membrane the ovum may remain between the separated muscular fibres of the uterus, and gradually stretching the peritoneum, as it enlarges may continue to develop up to the normal end of pregnancy.

I may illustrate this fact by the following case, recorded by Schultze in 1863:—A healthy primipara menstruated last in June, 1862. Labour began on March 30, 1863. On the following day she died of convulsions, and the Cæsarean section was performed ten minutes after death. The child was dead, presenting in the first position, and its right foot protruded through an aperture in the right segment of the fundus. The peritoneal insertion of the right tube in the uterus was close to the edge of the uterine rent; and the seat of the rupture showed a defective muscular coat, forming a pouch, as if out of a dilatation of the uterine end of the tube. In the same year Breslau recorded the case of a healthy woman, aged thirty, who six months after marriage was suddenly attacked, without any evident cause, with symptoms of abdominal hæmorrhage, followed by death in about six hours.

*Post-mortem.*—An extensive effusion of blood was found in the abdominal cavity, and at the point of opening of the left tube into the uterus, half belonging to the uterine parenchyma and half to the tube, was a ruptured sac, containing coagulated blood, mixed with chorion villi. From the size of the sac the pregnancy could not have reached more than the seventh week. A mucous polypus was found just below the uterine orifice of the tube, and very probably obstructed the passage of the ovum into the uterus.

In the Obstetrical Transactions for the year 1867, Braxton Hicks describes a case of interstitial pregnancy, which for some time enlarged equally towards the peritoneal and uterine cavities, but finally burst into the latter, permitting the escape of the foetus, and simulating an ordinary abortion; the sac then compressing, the placenta still retained in it, a large vein just beneath the peritoneum burst and produced fatal hæmorrhage. The difference between interstitial and simple tubal pregnancy can be shown in the dead body by the relation which the round ligament bears to the sac containing the foetus. In the interstitial form the ligament passes external to the sac, and in simple tubal pregnancy between the sac and the uterus. A distinction between this and gestation in a perfect or rudimentary horn of

the uterus offers great difficulties, since the relation of the round ligament to the sac of the foetus is the same in both, and the thickness of the septum between the sac and the uterus proper differs only in degree, though it is generally less in the interstitial form. Ovario-tubal pregnancy occurs when the ovary and tube both take part in the formation of the foetal sac.

Dr. Hayden, of London, in the year 1862, brought before the Obstetrical Society the case of a young woman who died after a few hours' illness from rupture of the sac of a tubal gestation; the post-mortem examination, by Dr. Smith and Dr. Hicks, showed that some time before the patient had conceived extra-uterine, the foetus being attached to the fimbriated extremity of the Fallopian tube in such a way as not to prevent conception, that the foetus died about the second month of pregnancy, still enclosed in its ovular structures; that at a later period she again conceived extra-uterine, but the ovum now descended to the middle of the tube, where it became arrested, lived about three months, and then died; three months after which the sac burst and death ensued.

A case remarkably similar in many particulars to this was recorded some years ago by Mr. Tufnell. A patient in the fourth month of pregnancy was seized after a long walk with violent abdominal pain and prostration, followed by death in twenty-four hours. At the post-mortem examination the abdomen was found to contain a large quantity of fluid blood, in which a foetus one inch in length was floating; a rent in the right tube disclosed a cyst from which the foetus had escaped. In the uterus was found a healthy male foetus proportionate to the date of conception.

When the fecundated ovum remains and becomes developed in the ovary, we have ovarian pregnancy, but this occurs so rarely that there are few well-authenticated cases on record, and the diagnosis of it during life may be quite impossible.

Hecker, in 1859, collected statistics of 222 cases of extra-uterine gestation illustrating the tubal, interstitial, and abdominal varieties, at the same time expressing the opinion that the existence of ovarian pregnancy still wanted proof.

There is, however, in the museum of Olmutz a preparation of a foetal sac, in the walls of which microscopic examination reveals the presence of ovarian stroma. Dr. Davis records a case where the foetus was found in a cyst developed from the ovary, and situated between the uterus and rectum.

In abdominal pregnancy the fecundated ovum develops in the abdominal cavity. An inflammatory new formation of very vascular connective tissue envelops the ovum in a sac, which, capable of great distension, may equal in size a gravid uterus at term. Very rarely this sac ruptures prematurely, and more frequently than otherwise the foetus is fully developed. We have no satisfactory observation of a foetus having lived more than ten months in the abdomen of the mother, though Dr. Bond states that a bright red ring encircles the

umbilicus of the child when gestation has been protracted. These cases may terminate in a variety of ways. Should the foetus live to the normal end of pregnancy, generally a kind of labour pain sets in, and often a decidua is expelled from the uterus. In the meantime the foetus dies, and after death undergoes a variety of changes. Sometimes the body of the dead foetus so irritates the walls of the sac that they inflame and suppurate, or even putrefy, and the consequent peritonitis kills the mother, or she perishes with hectic symptoms, exhausted by profuse suppuration. Should the peritonitis not become general the contents of the sac may perforate some neighbouring hollow organ, most frequently the large intestine, sometimes the vagina or bladder; or even the stomach, as in a case recorded by Raney, may suffer in this way, or the disintegrating foetus may escape through one or more fistulous openings in the abdominal wall. By whatever route the discharge takes place, the process of elimination is slow, and while it is going on death may ensue from exhaustion or pyæmia.

When the walls of the sac are less irritated by the dead foetus, a different series of changes take place—the soft parts undergo fatty degeneration, become partly reabsorbed, and the contents of the sac, after a lapse of some years, consists only of the bones of the foetus and a quantity of calcareous plates, forming what has been termed a lithopædion. Even in this state, however, the patient is by no means free from danger, and at any moment inflammation may arise, and be followed by suppuration and death. The name of secondary abdominal pregnancy has been given to those cases where the foetus originally contained in the Fallopian tube, the ovary, or even the uterus, has escaped after rupture of its sac into the peritoneum and remained there. Dr. Barnes thinks that all abdominal pregnancies are primarily either tubal or ovarian, in which opinion he is opposed to that of most other observers. A case of abdominal pregnancy, unique at least in its mode of occurrence, has been recorded by Koeberlé. He had removed from a patient the body of the uterus and part of the cervix, leaving the ovaries. In the portion of the cervix that remained there was a fistulous aperture opening into the abdominal cavity; through this semen passed, and produced an abdominal gestation. In some cases where the foetus alone escapes into the abdominal cavity, leaving the placenta in its original place of insertion, a very remarkable preservation of the former sometimes occurs. Whilst inflammatory new formations cover the embryo on all sides, it may doubtless continue to live for a short time, and under these circumstances the very vascular connective tissue closely approaches the skin on all sides, and the soft parts of the body are so marvellously preserved after death that after many years they show perfectly their normal structure.

The diagnosis of abdominal pregnancy is beset with difficulties. Along with the general signs of pregnancy, there is generally metrorrhagia; and this, together with repeated attacks of abdominal pain,



due, probably, to intercurrent attacks of peritonitis, occurs more frequently than in tubal gestation. The abdominal enlargement is generally greater transversely, and the foetus can be felt more distinctly than in normal pregnancy. Per vaginam, the cervix may be felt displaced by the pressure of the cyst, or fixed by perimetric adhesions. Either of these, Dr. Playfair thinks, is of great diagnostic value. We should certainly have recourse to the use of the uterine sound before undertaking any operative interference. In his paper on this subject Dr. Lawson Tait says there are two points invariably to be noticed in extra-uterine gestation which had gone past the period—viz., a show during the false labour, and subsequent diminution in the size of the abdomen, due to the absorption of the liquor amnii. Before the death of the child extra-uterine foetation may be mistaken for displacement of the normally pregnant uterus, during the early months, for pregnancy complicated with fibro-myoma or cystic disease of the uterus, and more rarely for pregnancy of one half of a double uterus. Indeed in this latter case, as Kussmaul has shown, a differential diagnosis may be quite impossible before death, and very difficult even after it. After the death of the child the diagnosis is more difficult, and the case might be confounded with pelvic hæmatocele and ovarian tumour, especially dermoid cysts, cancer, fibro-cystic disease of the uterus, hydatids of the uterus, and phantom pregnancy, with hernia.

Regarding the treatment of abdominal gestation, there is still some difference of opinion, though it is mostly admitted that no active measures should be adopted till the full term of development is reached, because there is not the same imminent risk of death from rupture as in the tubal form; and even if the destruction of the foetus could be secured there would still be formidable dangers from subsequent attempts at elimination or internal hæmorrhage.

If menacing incidents occur when the gestation is so far advanced that a living child may be expected, or if the case has gone on to term and the child be alive, we are strongly advised by the best authorities to perform the Cæsarean section, as we may thereby save the child, and the risk to the mother is scarcely greater than in waiting. An incision large enough to extract the foetus may be made in the linea alba, and, should there be no adhesions, the walls of the cyst should be stitched to the margins of the incisions to cut it off as much as possible from the peritoneal cavity. No attempt should be made to remove the placenta unless it be quite loose, as otherwise uncontrollable hæmorrhage, owing to the nature of its position, is likely to occur. The cyst should be carefully washed out with some antiseptic fluid. Schröder advises us, when possible, to remove the whole sac, with the foetus and placenta.

If the child has died towards the end of pregnancy the treatment is merely symptomatic. Any efforts of nature to eliminate the foreign body are to be assisted by incisions, and the removal of pieces of the foetus from the abdominal walls, the vagina, or the rectum. The



more extensive the adhesions of the sac to the abdominal walls, the more safely can incisions be made to remove its contents; and their formation may be favoured, as in Simon's method of treating hydatid cysts of the liver, by pushing in two trocars, and by dividing the bridge between them, thus causing a larger opening.

Mr. F. T. PORTER asked whether Dr. Purefoy had any statistics as to the number of cases in which abdominal section had saved mother and child, or as to any abnormal situation of the uterine end of the Fallopian tube in extra-uterine foetation.

Dr. DENHAM mentioned a case of tubal foetation at the fourth month, in which, during apparently perfect health, sudden faintness and exhaustion came on, followed by death. In such cases nothing could be done. In another case, twelve or thirteen years after conception, he had removed the foetal bones through the rectum. During all the previous years the patient had been in wretched health, and had had constant discharges of pus from vagina or rectum. After the removal of the bones she rapidly recovered.

Dr. ATTHILL said that when a case came under observation after the death of the foetus the treatment was simple, to endeavour to facilitate the exit of the foreign body; but while the foetus was alive, in the early stages, there could be no certainty of diagnosis whether the foetation were tubal or abdominal. The rule was not to interfere, but there was a limit to this, and if the patient were suffering great distress, and he were certain of the presence of an ovum, he would endeavour to remove it. When the child had nearly reached full term it was proper, under certain circumstances, to endeavour to save mother and child by abdominal section, but in the earlier stage he would operate according to Dr. Thomas's method, per vaginam, but without attempting to remove the placenta. Drainage could then be carried out more effectually.

Dr. M'CLINTOCK had seen some cases of pelvic hæmatocele in which early pregnancy had been supposed to exist. He was satisfied that at least two of them were due to rupture of an extra-uterine sac a month or six weeks after impregnation.

Dr. PUREFOY, in reply, said that immediate abdominal section had the sanction of all good authorities, though, as yet, no one had had the courage to perform it. He believed that the foetal bones, in his case, passed through the vaginal wall at the side of the cervix.

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*Specimen of Extra-Uterine Polypus.*

By J. DENHAM, M.D. Edin., L.K.Q.C.P.

This specimen is an interesting example of polypus. Some days ago I was called in by Dr. O'Flaherty to see the patient from whom this tumour was removed. At first the lady, with that innate delicacy which characterises our nation, would not permit a vaginal examination, and Dr. O'Flaherty was obliged to treat her for ordinary uterine

hæmorrhage. However, after she became very much worn down by repeated hæmorrhages, she permitted a vaginal examination, and then he discovered the existence of a very large tumour. The following day I saw her, with Dr. O'Flaherty; and, as she had been greatly exhausted by the previous hæmorrhages, we determined that we would wait a few days before attempting its removal. The day following, the hæmorrhage returned unexpectedly, and with unusual severity. As we saw that waiting any further might endanger the patient's life, we proceeded on the following morning to remove the tumour. We found that it was firmly impacted in the pelvis, and that it evidently had escaped through the os and come down into the vagina. Having placed the woman under chloroform, with the assistance of Dr. O'Flaherty, I succeeded in passing an *écraseur* over the body of the tumour. We cut through the pedicle, which was not very thick, as you observe from the appearance of the tumour. We found the tumour still as firmly fixed as it was before, and that no power that we could apply with safety would draw the tumour down, or even move it on its axis. We came to the conclusion that we had not succeeded in cutting through the neck. We passed the wire twice again over the tumour with an equally unsuccessful result. However, I presume the manipulation we exercised in trying to get the wire round caused the parts to dilate a little and yield. She was an elderly unmarried lady, and the parts were extremely rigid, and it appeared like a case of tedious labour with locked head. However, ultimately the tumour became movable. The difficulty then was to remove it. We had a pair of Dr. Madden's small forceps, with which we grasped the tumour, but even with that instrument and the *vulsellum* we failed to draw it down. Ultimately, however, we got it down. It was then very much larger than it appears now. We were obliged to slit the perineum with a pair of scissors in order to get it away. I never used greater force with a forceps than I had to do in this case, so firmly locked was the tumour. Dr. O'Flaherty will be able to state how the patient is going on.

Dr. O'FLAHERTY.—After the removal of the tumour by my friend, Dr. Denham, the case assumed a favourable condition; but from the exhaustion of the patient, caused by previous hæmorrhages during the last two or three years, the result was at first very doubtful. I think, however, that now the patient is in a fair way of recovery.

Dr. ATTHILL.—The case seems to illustrate one point in a very interesting manner. In the great majority of cases of intra-uterine polypi, as soon as the tumour is extruded from the uterus, the hæmorrhage ceases to a great extent, but it appears in this case it was not so. Within the last ten days I removed a polypus nearly as large as the one before you from a lady whose case was somewhat analogous to the present—with this difference, however, that her sole symptoms were profuse and exhausting leucorrhœa; she had no hæmorrhage whatever. An attempt at spontaneous cure was being set up, for the polypus was beginning to slough; and the probability

is that had it been left alone it would have sloughed away and run her down so as to cause death.

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*Erysipelatous Metritis.*

By THOMAS D. FINUCANE, L.F.P.S. Glasg.

As you are aware, the subject of my paper this evening is "Erysipelatous Metritis," the importance of which has been lately brought rather forcibly to my own mind by the occurrence of two deaths of young women after their confinements, as also a third death in the same neighbourhood—the virus in this case having been brought from a scarlatina patient. The nurse who attended on the two first cases (I may mention she was not a qualified one) had a daughter ill with erysipelas at the time of her attendance. She did not conceal this, but told the first family of it, "thinking," as she said, "that it was no harm." It has been the subject of much inquiry with myself why the case of erysipelas as also of scarlatina should recover, and the poison or virus conveyed or transmitted should prove fatal in every case of confinement with which it has been brought in contact, so far as I know. The patients were not in a position to have a medical attendant, unless in an emergency; and in such I was sent for to see one of those cases, the symptoms and history of which I now submit. I first visited this patient on the evening of the 3rd of November, 1876. She was then in the first stage of labour, progressing favourably—so that she was confined on the morning of the 4th. The following day (the 5th) she had severe abdominal pains, which were treated by the nurse—the usual terebinthinate treatment followed by a full opiate, which gave relief. On the 6th, however, I was again sent for, and found the patient in a critical state—very rapid pulse; restlessness; suppression of the lochia; breasts almost empty; much tympany; no vomiting. Repeated the terebinthinate enema, linseed poultices, full opiates, with minute doses of submuriate, chicken-broth. On the morning of the 7th a diffused rash showed itself over the thighs and hips of the patient. She grew rapidly worse; felt as if she must burst; could not lie in any position for any length of time; the tension of the abdominal walls was quite remarkable and unyielding. The pulse on the evening of the 7th was peculiar—at times it seemed almost to disappear, and then to become more distinct. She died on this, the fourth night after her confinement, the functions of kidney and bowels being quite as they ought to be during her illness. In a few days after her death, her sister, who was in constant attendance upon her, was covered with a rash, and has been suffering almost ever since with articular and muscular pains—said by her medical attendant to be a regular rheumatic attack.

[The author quoted at length the opinions of Drs. Austin Flint, Bennett, and Bryant, on epidemic erysipelatous fever and erysipelas,



and of Dr. Carpenter on the operation of medicinal or poisonous substances, and their determination to special parts and organs of the body. He observed that many facts connected with the action of poisons on the economy tended to confirm the Hallerian doctrine of irritability. Whether it be the inhalation of a poisonous gas, or the contact of an irritant, the inherent irritability of muscle is roused to rebellious action. In accordance with this theory, the suppression of the lochia would depend on muscular action. In conclusion, he remarked that the position of his patient in a dark confined room was much against healthy respiratory interchange, so essential for our well-being at all times; and therefore he suggested the propriety of the admission of more light into our dwellings and hospitals, having regard to its purifying influences, and to its wonderful action upon some poisonous substances.]

Dr. ATTHILL thought that the name "erysipelatous metritis" was not borne out by the pathology of the case, which he regarded as one of autogenetic septicæmia. He believed that scarlatina was not so dangerous to puerperal women as is generally supposed. He had never known a case in which a puerperal patient took the infection of scarlatina, though he did not deny that it occurred occasionally. A good many deaths from metria had occurred in the Rotunda Hospital, chiefly in March last, and they had at the same time several cases of scarlatina, of which one at least was kept in the wards, but no patient in the hospital contracted the disease.

Dr. DOYLE mentioned the case of a puerperal woman who had a child affected by scarlatina in the same bed with her the day after delivery, but escaped the infection.

Dr. MORE MADDEN thought it very dangerous for medical men to attend labours while they had cases of scarlatina under their care; he mentioned the case of a lady who would keep her child, ill with scarlatina, in the same room with her. On the third day she was attacked by symptoms of puerperal fever, of which she died.

Dr. M'CLINTOCK said that parturient women might be protected by having had scarlatina previously; but that if scarlatina did arise before the third day of childbed, it was more dangerous than puerperal fever itself. He considered, however, that the idea of the communicability of contagious diseases, or their being carried about by medical men, was at present enormously exaggerated.

The PRESIDENT thought it a mistaken doctrine that certain diseases were communicated by poison, and could not arise without it.

Dr. DENHAM thought that the same poison would produce erysipelatous inflammation in one patient, scarlatina in another, and puerperal fever in a third. He considered puerperal scarlatina most dangerous. Out of fifteen cases of it during his mastership, twelve died.

Dr. HENRY KENNEDY said that in patients who died from puerperal fever he had often found an erysipelatous state about the vulva, nates, and groins, but he did not believe the disease could have spread from erysipelas. There was no evidence that scarlatina could



engender puerperal fever, but there might be a complication of the two.

Dr. FINUCANE, in reply, said that his object was to show that the cause of the fatality of erysipelas or scarlatina in puerperal patients was that the poison affected the tissues, and not the blood.

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## Obstetric Summary.

### *The Mutual Influence of Traumatism and Pregnancy or the Puerperal State.*

In a paper read before the Société de Chirurgie, M. Vernueil, who in a previous discussion on the relations between pregnancy and traumatism maintained the opinion that pregnancy and the puerperal state have a special influence in predisposing to suppuration, relates two cases which he considers to support his views. The first was that of a woman aged twenty. At the age of four she suffered from coxalgia, which lasted for three years, and left behind a certain degree of lameness and deformity of the right leg. With these exceptions she was perfectly cured, and remained well until she became pregnant, at the age of nineteen. Soon after the commencement of pregnancy she began to have pain in the right groin and thigh, and by the time full term had arrived walking was almost impossible. Soon after delivery she came under observation with an enormous abscess of the thigh, extending from the great trochanter to the knee. After evacuation of two litres of pus she recovered.

The second case was that of a woman aged twenty-five. She had had in infancy glandular swellings in the neck. At the age of eleven she suffered from arthritis of the knee, the result of an accident, which confined her to bed for four months. This was completely cured, and she remained well until she became pregnant, towards the age of seventeen. Towards the end of pregnancy a swelling of the knee appeared, which was cured soon after delivery. It returned, however, in her second pregnancy, at the age of twenty, and this time gave rise to two abscesses, which were opened and quickly healed. At the age of twenty-three she became pregnant for the third time; soon after delivery the knee became swelled and painful. Abscesses were formed and opened, but her recovery was very slow, and fistulous openings remained.

M. Vernueil also records two cases in which the operation for ruptured perineum resulted in grave accidents, in the first, three months, and, in the second, five months after delivery, and he thinks that in both instances it was performed too soon. The first patient was subject to dysmenorrhœa with ovarian congestion, and a time intermediate between two periods was therefore chosen for the operation. All went well at first, but menstruation came on ten days before the expected time. It was accompanied by a very severe

peri-ovariitis, which, however, resulted in recovery. Union gave way at points of the suture, and a small recto-vaginal fistula was the consequence. The second patient had suffered from œdema and albuminuria during pregnancy. After delivery it was ascertained, on repeated trials during the course of five months, that the urine was free from albumen. M. Vernueil, at the end of that time, consented to operate. Vesical tenesmus came on the day after the operation, but this subsided, and the sutures were removed. Soon after, however, an acute nephritis supervened, with copious albuminuria, but ended in convalescence after some days. The author concludes that if any morbid condition exists before or during pregnancy, an operation after delivery ought to be deferred till it is certain that it is completely cured.—*Archives de Tocologies*, June, 1877.

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#### *Abdominal Section for Extra-Uterine Fœtation.*

In the *Lancet* of July 14, 1877, is recorded a case of extra-uterine fœtation under the care of Dr. Hall Davis, at the Middlesex Hospital. The patient, twenty-seven years old, had been married eighteen months, but never pregnant before. The last normal menstruation took place about six months previously. A few hours after the appearance of the menses she was suddenly seized with severe pain in the lower and left part of abdomen. Three weeks after this she noticed a small lump of the size of a hen's egg above left groin. This gradually increased, and was always tender. For the last month the increase had been more rapid. Two or three months ago she noticed her breasts had become somewhat enlarged. During nearly her whole illness she had been losing blood more or less per vaginam, and on several occasions had passed what she described as small bits of flesh. She had never felt foetal movements.

At her admission a circumscribed tumour was found in the left iliac region, occupying also part of left lumbar and umbilical region, and extending from Poupart's ligament to a level with the umbilicus. It was tense, tender, and presented a sense of fluctuation even as far as an inch to right side of linea alba. The cervix was patulous, and through the relaxed os the finger passed into the uterus, the cavity of which was a little enlarged, but quite empty. Rectal examination reached the lower boundary of the enlargement on the left side. No foetal movements, foetal heart, nor uterine souffle could be discovered. The patient had had febrile symptoms, with rigors, for about ten days, and suffered much pain. The temperature varied from 102° to 104°, and pulse from 120 to 130. Dr. Hall Davis concluded that the case was one of extra-uterine fœtation affecting the left appendages of the uterus, and an operation was resolved on.

The operation was performed by Mr. Lawson on June 25th. An incision about three inches long was made over the most prominent

part of the cyst in a line parallel with, but external to, the course of the epigastric artery. The surface of the cyst presented a purplish tint and glistening appearance, and was traversed by large veins and venous sinuses. On passing the hand into the abdominal cavity, the anterior half of the tumour was found free, but the posterior part was firmly adherent to the parts beneath. On incising the cyst, the knife came at once upon placenta. The hand was passed between a portion of placenta and the cyst wall, to which it was adherent, a foot seized, and the foetus extracted. The foetus was dead, and the skin had desquamated. The funis was tied and divided. The portion of placenta already separated was ligatured, excised, and removed, together with the umbilical cord to which it was attached, a sufficient length of ligature being left by which to remove, when the time should arrive, the remaining and adherent portion of placenta. The edges of the opening in the cyst wall were now stitched to the sides of the opening in the abdominal parietes, including the peritoneum, so as to shut off the peritoneal cavity. As there was some oozing of venous blood from the lower part of the cyst, and the pulse was very weak, the cavity was washed out with solution of perchloride of iron (half ounce to pint), upon which the bleeding ceased. At 1 A.M. the next morning the abdomen was tympanitic, and the pulse almost imperceptible, and at 2 P.M. the patient died.

At the autopsy the edges of the cyst were found softly adherent by lymph to those of the wound. The cavity of the cyst was lined along its anterior and upper surface with firmly adherent placenta; the remaining inner surface of the cyst was covered with blackened ragged shreds, and contained in addition a large dark blood clot. The uterus was a little enlarged, but contained no decidua. The cyst was found to occupy the position of the left ovary, no trace of which could be found. The left Fallopian tube could be traced up to and was lost upon the cyst wall, in some parts of which involuntary muscular fibre in considerable amount was found. The tube was much thickened and dilated towards its fimbriated end, and filled with thick secretion, some of which looked black. The right ovary was normal; the right Fallopian tube adherent to the right side of the cyst wall by its fimbriated end. Translucent granules of tuberculosis were scattered through both lungs and kidneys. No trace of peritonitis could be found anywhere.

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#### *Mechanical Appliances for Traction with Midwifery Forceps.*

In the *Bulletin Général de Thérapeutique* for May, 1877, is contained an article by M. Chassagny, of Lyons, in which he criticises the new forceps of M. Tarnier, described in the *OBSTETRICAL JOURNAL*, June, 1877, and maintains the superior mechanical efficacy of his own instrument. He points out that M. Tarnier does



not fully realise his own ideal of allowing the foetal head perfect mobility to follow the pelvic curve. For the traction rods being articulated with the prehensile branches at the lower extremity of the fenestræ of the latter, the force is applied not at the level of the centre of the foetal head but at a considerably lower point. In this way a certain leverage is exercised, although upon a much shorter arm than with the ordinary forceps, tending to prevent any movement of extension or flexion of the foetal head from the effect of the pelvic resistances. M. Chassagny also contends that M. Tarnier's forceps prevent the natural movements of rotation, an objection which would seem to be valid as regards his favourite form of instrument, in which the force is exercised by rigid traction rods, but not to be applicable to that in which the traction is applied by means of cords passed through the fenestræ. In M. Chassagny's instrument each fenestra is divided by a transverse bar at its centre, in the middle of which cords for traction are fixed. The point of application of the force thus lies on the transverse axis through the centre of the foetal head, and the most complete mobility of flexion and extension as well as of rotation is allowed.

A second principle is aimed at by M. Chassagny, which would seem to be not in accordance with, but in direct opposition to, the practice of Nature. He considers a continuous preferable to an intermittent traction, because every millimetre gained is, in that case, permanently acquired. It is an almost necessary sequence from this that the traction should be made by mechanical means and not by the hand, since the operator could scarcely maintain continuously and equably a force of from thirty to fifty kilogrammes, which the author is accustomed to call into play. In M. Chassagny's original mechanism, which is criticised unfavourably in M. Tarnier's work, the traction was throughout in a constant direction, being made from a fixed support in front of the patient's knees. Thus at the inlet and outlet of the pelvis its direction deviated very considerably from the pelvic axis, whilst near the middle of the pelvis it coincided with it. The author considered that, provided the direction did not deviate more than  $45^{\circ}$  from the pelvic axis, the deviation was unimportant, and the excess of pressure inappreciable. Since then, however, he has modified his apparatus. The support is taken from a metal plate, having a curve corresponding to that of the sacral region, upon which the patient is placed in a sitting position. Upon this is fixed a metal rod, articulated by means of a toothed wheel, so that it can be fixed in different positions. From its extremity traction is made upon the cords by means of a screw. The author then claims that traction can be made in the direction of any part of the pelvic axis, and that the handles of the forceps furnish an indicator like the prehensile branches of M. Tarnier. It is here open to the same objection as the instrument of M. Tarnier, that the weight of the handles, acting on the long arm of a lever, and thus at a mechanical advantage of at least three to one over any of the frictions or



resistances acting on the head, and at a far greater advantage over the resultant force by which flexion or extension is produced, tends to depress the indicator too much, and in this way to impair or to destroy its accuracy. M. Chassagny's last instrument would seem also to be open to the same objection which applies to long straight forceps—namely, that on account of the resistance of the perineum the traction cannot be directed sufficiently backward to coincide, or nearly coincide, with the pelvic axis, when the head is arrested at, or above, the brim.

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## Gynæcic Summary.

### *The Treatment of Fissures of the Cervix by Plastic Operation.*

Professor Breisky, of Prague, relates his experience of cicatricial eversion of the os uteri resulting from fissures of the cervix and its treatment by the operation recommended by Emmet—namely, paring the edges of the fissures and uniting them by silver sutures. Although an anatomical and etiological description of the condition had previously been given by Roser, the author had not recognised its frequency and importance until reading Emmet's article. He is now convinced that he had frequently regarded and treated simply as erosion of the cervix and hypertrophy of its two lips cases which in fact depended on bilateral fissure, the cervix being rolled outward, and the apparent os being really the cervical canal at the level to which the fissures had reached.

In the course of a year the author has met with fourteen characteristic cases of the lesion, nine in private and five in hospital practice. Of these only five consented to undergo the operation. In all cases the symptoms complained of dated from a delivery, usually one in which the labour was rapid, and not completed by artificial means. In most of the patients menstruation was excessive, and in only one was it scanty. In three of the five cases operated on, the fissures on both sides healed by primary union; in the remaining two primary union took place at one side only, and success was completed by a second operation. In no instance did febrile symptoms arise, or inflammation in the neighbourhood of the wound, but in one a complication arose which could not be directly connected with the operation. On the eleventh day, after the sutures had been removed, a hæmatoma in the recto-vaginal septum arose from straining during defecation, and this eventually made its way into the rectum. The patient had afterwards an attack of pleurisy, and the final result of the operation in her case, as to relief of symptoms, could not yet be ascertained. Three of the remaining patients were completely relieved from their sufferings; the fourth had still to wear a Hodge's pessary, on account of retroversion and flexion, but

her condition was much improved, especially in respect of menorrhagia. The most striking case was that of a woman thirty-one years old, who had suffered ever since the birth of her last child, eight and a half years before. She was almost incapable of walking, and the attempt to take exercise so increased her pains as to give rise to vomiting and faintness. She could never walk more than 100 steps, and at every menstrual period was obliged to keep her bed. Protracted and diverse treatment, including cauterisations and the use of various pessaries, had led to no improvement. The plastic operation was performed, and the vivified surfaces were so considerable that on the right side ten and on the left four sutures were required. No inflammatory symptoms followed the operation, and a month after it the cervix was small and conical, without a trace of the erosion, which had previously obstinately resisted cure. The first menstruation after the operation was painful for the first two days, at the end of which a small clot was expelled; but the following periods were progressively free from pain. Seven months after the operation she was in good health, had lost all pain, and was able to walk with freedom.

In the execution of the operation the only difficulty Professor Breisky has found is in the resistance of the tough tissue of the movable cervix to the passage of the needles, and he finds it desirable to make counter-pressure with a strong blunt hook. He has not found any serious bleeding to occur in any case, but, as a matter of precaution, he uses, in place of Emmet's uterine tourniquet, an adjustable compressor invented by himself. This consists of a long pair of forceps ending in semicircular blades at right angles to the shanks. The degree of compression is regulated by a spring catch attached to the handle. The cervix is fixed by tenaculum forceps or hooks to prevent its slipping backwards. The author claims for this instrument the advantage that the pressure can be regulated at any moment, and that it can be reserved for the moment when it becomes necessary, and needless crushing of the tissue thus avoided. Professor Breisky confirms all the evil results attributed by Emmet to cicatricial eversion of the cervix, and he considers that it is also apt to give rise to chronic peri-uterine cellulitis, from which result cicatricial bands, which gradually disappear after the closure of the fissure by operation.—*Wiener Medizinische Wochenschrift*.

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#### *The Method of Enucleating Fibroid Tumours.*

In the *New York Medical Journal* for March, 1877, Professor Thomas describes a new instrument for the enucleation of fibroid tumours. It consists of a spoon-shaped scoop, with serrated edges. On account of the convex shape of its back, and the mode in which

the teeth of the saw are arranged upon its edge, it is impossible to do injury to the uterine wall by its means. Professor Thomas divides intra-uterine sub-mucous fibroids into three classes, with reference to the possibility of their removal, sufficient dilatation of the os being premised in all cases:—1. Those that have a very extensive attachment, the proper treatment for which is to cut through the capsule, and then induce the uterus to expel the tumour through the artificial opening. 2. Pedunculated tumours. These should be dragged down with strong forceps, and the pedicle severed with scissors, the *écraseur*, or the galvano-caustic wire. 3. Those of intermediate character, in which the tumour is sessile, but not attached to the greater part of the uterus. It is for these cases that the use of the serrated scoop for enucleation is recommended. Professor Thomas relates a case in which it was used. The patient was forty-seven years old, and was reduced to a very anæmic state from the metrorrhagia. The uterus was enlarged to the size of four months' pregnancy, and the sound passed five inches. A pyriform tumour in the uterine cavity could be reached by the index finger. This was found to be free on the anterior wall, but attached throughout the posterior to within one inch of the os internum. The cervix being severed on each side, a powerful vulsellum forceps fixed firmly in the growth, and the attachment rapidly severed by means of the serrated scoop. This was effected in a very few minutes, although the author believes that, by methods hitherto used, it would have taken at least half an hour. The patient recovered well.

In the *American Journal of Obstetrics* for January, 1877, Dr. Emmet relates a case of operation for the removal of a very large intra-uterine fibroid. The patient was twenty-eight years old, and single. A fibroid tumour had been detected a few months before, and had been increasing rapidly. At her admission the abdomen was filled with a tumour extending above the umbilicus. The vagina was small, the os was dilated, its edges thin, and the tumour presented. Ergot was administered for some days, and the tumour gradually advanced into the vagina, and the os became retracted. Decomposition having commenced, the operation was undertaken for its removal. A fruitless attempt was first made to pass a cord round the mass by means of Gooch's canula. The operation was proceeded with by the removal of the mass from the vagina, piece by piece, with scissors, successive portions being drawn down into view with a double hook. The intra-uterine portion having been reached, the process became very difficult, and the growth could only be got away in shreds. At length the patient was placed on the left side, and the largest size of Sims's speculum introduced. A considerable portion of growth was then drawn down by a large hook and cut away, the uterus contracting upon the remainder, so that when the attachment was reached it was reduced to a pedicle not larger than the index finger. The patient had been much exhausted during the operation,

which lasted two hours and a half, but was kept up by hypodermic injections of brandy. An hour afterwards, however, the pulse became weaker, and rose to 175 per minute, and she died nine hours and a half after the operation. The tumour removed weighed eight pounds.

The author deprecates any attempt to enucleate a fibroid tumour of such size, since we cannot know how far the uterine tissue may have become involved. As soon, however, as it begins to be expelled through the os there is proof that a reasonable amount of uterine muscular tissue to aid. The growth should then be removed as soon as possible, before there is time for the occurrence of sloughing and septicæmia. Dr. Emmet considers blunt-pointed scissors, curved on the flat side, better for this purpose than the *écraseur*, strong traction being kept up all the time, to stimulate the uterus to contract, and a cord being carried round the base of the tumour, if possible. He considers that in this case the effect of shock may have been increased by the rapid expulsion of the tumour under the influence of ergot. In future he would strive to moderate the action of the uterus, in the hope that a degree of tolerance might become established.

#### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

"Das Verhalten des Cervix Uteri Während der letzten Schwangerschaftsmonats." Von Dr. A. Martin. Stuttgart. 1877.

"The Woman's Hospital in 1874." By J. Marion Sims, M.D. New York.

"A Synopsis of Private Obstetrical Practice." By William Ingalls, M.D. Cambridge, U.S.A.

"Fourth Annual Report of the London Temperance Hospital."

"New Intra-Uterine Pessary." By V. H. Taliaferro, M.D. Atlanta.

"Puerperal Septicæmia." By J. W. Underhill, M.D. Cincinnati.

"Rare Forms of Umbilical Hernia in the Fœtus." By James R. Chadwick, M.D., of Boston.

"Labour Complicated with Uterine Fibroids and Placenta Prævia." By James R. Chadwick, M.D.

Communications received from Dr. Angus Macdonald, Dr. Boze-man, Dr. Boulton, Dr. Cuthill, Dr. Church, Dr. Aikman, and Dr. J. Williams.

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THE  
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Original Communications.

ON THE BEARINGS OF CHRONIC DISEASE OF  
THE HEART UPON PREGNANCY AND  
PARTURITION.

By ANGUS MACDONALD, M.D., F.R.C.P.E., F.R.S.E.

Lecturer on Midwifery and the Diseases of Women and Children in the Medical  
School, and Physician-Accoucheur New Town Dispensary, Edinburgh.

(Read before the Obstetrical Society of Edinburgh.)

(Continued from p. 308.)

I NOW proceed to the consideration of the following eight cases of mitral insufficiency.

CASE XIII.—*Mitral Insufficiency of slight degree watched through five Pregnancies.*

Mrs. B., now aged thirty-two, was married on 25th June, 1867, and has been five times confined since that period. 1st, on 23rd June, 1868; 2nd, on 19th December, 1869; 3rd, on 19th March, 1872; 4th, on 10th April, 1874; 5th, on 23rd March, 1876; she never had rheumatic fever. When I was first asked to attend her I found she had a soft systolic murmur at the left apex, which still persists. This was then accompanied by occasional palpitation, slight increase of cardiac dulness, and much pain in that portion of the upper dorsal and lower cervical parts of the spine called by some authors the cilio-cardiac centre. But since that period Mrs. B. has improved

greatly in general health, and her pregnancies and labours, with the exception of the last, have been natural and have been got over without any inconvenience. On the last occasion Mrs. B. was very sleepless after her confinement, and became on the fourth day delirious; her pulse rose suddenly to about 130, whilst her temperature mounted up to  $105^{\circ}$ , but apparently entirely independently of the cardiac complication. Matters, however, returned to the normal condition under the use of chloral with bromide of potassium to subdue the nervous symptoms and secure sleep, and of quinine to combat the fever. There was no evidence whatever of septicæmia, nor could any inflammatory lesion be detected anywhere. It is to be added, that the whole of Mrs. B.'s children have been remarkably small, and that in consequence the second stage of labour has been both easy and short in all her confinements.

Mrs. B.'s condition on March 1st, 1877, was as follows:—There is only very slight increase in cardiac dulness in any direction. There is still a soft systolic murmur audible at both the mitral and the tricuspid area. The second sound in the pulmonary area is intensified, and the impulse of the heart is somewhat thumping. There is apt to be breathlessness on exertion, and occasional palpitation. But, on the whole, Mrs. B. enjoys good health.

CASE XIV.—*Mitral Insufficiency.—Considerable Hypertrophy of Left Ventricle.—Watched through two Confinements.*

Mrs. M. enjoyed good health till she was twenty-seven years of age, when she suffered from a severe attack of acute rheumatism. The fever had two relapses, and she was compelled to keep her bed for upwards of three months. Ever after this illness she was breathless and liable to palpitation on the slightest exertion. In the year 1870 she consulted me on account of these symptoms. I found a loud systolic murmur covering the first sound of the heart at the apex. There was little increase of dulness. The other orifices seemed to be perfectly healthy, and there were none of the other general symptoms of defective cardiac action, such as œdema, cough, &c. The patient was, however, somewhat anæmic,

and she profited greatly by the use of iron and digitalis. Before her marriage, which took place on the 8th of December, 1872, she consulted me as to the propriety of taking this step. I gave my sanction to the marriage. My judgment rested upon the grounds—1st, that the patient suffered from a purely mitral lesion of insufficiency, which at present was nearly mute and likely to remain so for a long time; 2nd, that her intended husband was in such comfortable circumstances that her married life was likely to be an easier one than the life she was leading in her unmarried state. She was accordingly married in December, 1872, at the age of thirty-five. She became pregnant, and fell in labour at full term on 24th November, 1873. Her pregnancy had been unusually free from discomfort. Her labour was easy, till towards the end of the second stage, when the bearing-down efforts became so severe that to avoid injury to her heart I completed delivery with short forceps. Both mother and child did well, the child being a fine, healthy boy. She was again confined on 12th of November, 1875. On this occasion the second stage was prolonged, and I had again to assist instrumentally, with a like good result to mother and child. I examined Mrs. M.'s heart on 1st March, 1877, and found its condition as follows:—Cardiac perpendicular dulness 5 inches, transverse 4—4½ inches. A loud soft systolic murmur replaces the first sound at mitral area, but it is heard, though faintly, at each of the other three areas, and also loudly on moving the stethoscope towards the axilla. The second sound is clear, somewhat intensified, but not reduplicated in the pulmonary area. Patient is very thin, but there are no chest symptoms except breathlessness on exertion. No enlargement of liver or spleen. Systolic murmur audible between scapula and spine on left side behind.

*CASE XV.—Mitral Insufficiency.—Hæmoptysis.—Congestion of Right Pulmonary Apex.—Left Heart hypertrophied.*

Mrs. J. A. suffered from rheumatic fever first when eleven years old, and again when eighteen. Since the latter attack she has always felt rather breathless on exertion. Having

been considerably exhausted while nursing her mother during the last illness of the latter, she went to Italy to recruit, and passed the winter of 1873 at Como. While there she had several attacks of hæmoptysis, once in October of that year, and again in the April and in the summer of 1874. She was married in April, 1875, at the age of twenty-three. I saw her for the first time in November, 1875, when she stated to me that she expected to be confined in the first week of February, 1876. On her making some inquiries concerning the propriety of her having chloroform during her approaching accouchement, I was led to examine her heart, and discovered a very loud soft systolic mitral murmur. Her labour occurred on the morning of January 27th, 1876. It was normal in every respect, and also easy. The only peculiarity was that her pulse rose very high, more particularly during the second stage. It was not, however, irregular. It ought to be noticed that there was no hæmoptysis during the pregnancy or during the labour. The patient had chloroform during the greater part of the second stage. She suckled her child for six months, but as I then found that it was telling seriously upon her general health, I advised her to cease nursing. Soon afterwards this Mrs. A. went to reside for a month in Arran, and returned to town in the end of August considerably improved in health. Shortly after, however, the hæmoptysis recurred. I examined her chest and heart on the 4th September, and could find no pulmonary lesion sufficient to account for the hæmoptysis. There was still the loud systolic mitral murmur audible everywhere over the cardiac region, but no evidence of any lesion affecting the other cardiac orifices. I again examined my patient on the 7th March, 1877, when I made the following note of her state:—The apex of the heart beat most perceptibly between the fifth and sixth ribs, a little inside the perpendicular nipple line. Heart's impulse intensified. The perpendicular dulness begins at the upper border of the third rib, extends to the sixth rib, and measures five inches. The transverse dulness on a level with the nipple amounts to fully  $3\frac{1}{2}$  inches. There is no evidence of exten-



sion of cardiac dulness towards the right, and there is no pulsation in the jugular veins. A loud murmur at the apex replaces the first sound in the mitral area. In tricuspid area the systolic murmur is heard to be harsher and apparently louder than in the mitral area. The murmur is audible over the whole of the cardiac region, and also behind between the lower part of the left scapula and the spine. Second sound seems clear throughout, and is not markedly intensified in the pulmonary area. There is comparative dulness at the apex of the right lung anteriorly, with increased vocal resonance and thrill, and occasional crepitation. Patient is very thin. Appetite good.

The three foregoing cases of mitral insufficiency may be dismissed with very few observations.

Case XIII. is one of very slight incompetency, well compensated, and occurring in a patient whose circumstances are tolerably easy, and whose labours have been specially so, in consequence of her children being unusually small. Consequently, although the patient has been carefully watched since June, 1867, through five pregnancies, the condition of her heart, and indeed of her general health, is better now than at the date of her marriage. The only evidence of cardiac disturbance she experiences is occasional palpitation, and considerable breathlessness on exertion. I ought to observe that Mrs. B. has never nursed her children, which may also account partially for her continued good health.

Case XIV., on the other hand, shows that Mrs. M. is manifestly much worse in health now than when I allowed her to get married. She is thin and worn-out looking; the murmur of insufficiency is louder and more diffused. There is very manifest increase of size in the heart, although the symptoms do not give evidence of increased power in it. Altogether the patient is in a critical condition at present, and I should very much deprecate a third pregnancy in her case. It is to be noticed that without my knowledge she foolishly suckled her last child for over a year, a proceeding which in her case could only be very injurious. Still, her condition at present is tolerable, and if she is fortunate enough to escape becoming pregnant again, which at her age

of forty years is not improbable, she may hope to enjoy a life of many years with a fair measure of health and comfort. If, on the other hand, she becomes a third time pregnant, it needs very little of the prophetic gift to predict that the result is certain to prove extremely disastrous.

The condition of the patient of which Case XV. is the history, is not so satisfactory as that of either of the other two. Mrs. A. suffers from a lesion of the heart, due to rheumatism occurring a *short* period before marriage, and consequently the injurious effects of the pregnancy upon the condition of the heart have, as usual, been more pronounced. Though she was able to get through the period of uterogestation with comparatively little trouble, the deteriorating effects of the pregnancy and of the consequent lactation, though only continued for a few months, are seen in the repeated attacks of hæmoptysis, with breathlessness, palpitation, and general weakness.

The increase of the incompetency is also evidenced by the great loudness and wide distribution of the murmur; while the absence of the usual accentuation in the pulmonary area seems to me to indicate enfeebled action of the ventricles, right as well as left. If, therefore, the dulness at the right apex be not the commencement of some pulmonic mischief of a tubercular nature which is to sap the springs of being through the lungs, and this is hardly to be expected in a patient with the rheumatic diathesis so strongly marked, Mrs. A. has undoubtedly threatening rocks ahead in the condition of her heart. A second pregnancy would doubtless give rise to very unfavourable symptoms, and might probably lead to very sad consequences.

Such a case strongly supports the view that we ought not to give our sanction to the marriage of a patient who has recently suffered from endocarditis, even although the acute symptoms have disappeared, and the compensatory arrangements of the circulation seem in a fair way of being consolidated. Pregnancy is certain to lead to derangement of the compensation, and to prevent the new conditions on which the circulation is to be carried on from being effected quickly and safely.

**CASE XVI.—*Mitral Insufficiency—Premature Labour at Seventh Month—Death three days after.***

(Communicated to me by Dr. John Linton, 60, George Square.)

Mrs. S., aged thirty-two, was known to her husband for about two years previous to her marriage. She was then noticed to be occasionally breathless on going up steep inclines and on ascending stairs, sometimes placing her hand over the region of the heart. There was nothing further observable about her condition to indicate that there was disease of any kind likely to interfere with married life, unless a slight occasional dry cough, which was always increased by exposure to night air. She menstruated once after marriage, and when about two months pregnant the cough and breathlessness increased considerably, at which time I was consulted about her. I found her suffering from slight bronchitis, as also from mitral disease of the heart—systolic. I ordered a stimulant expectorant, which gave her great relief, as also to keep the house. The cough considerably abated, but this brought little or no relief to the breathing, which steadily became worse. On going out during the month of January (being the second time for a month or two) and walking quietly for about five hundred yards, she became so breathless that she had almost to be carried home, and managed to ascend two flights of steps with the greatest difficulty. About a month afterwards she was seized with labour pains, and bore with comparative ease a living seven-months' child. For three days she remained quiet, well, and easy in her breathing. About 10 A.M. on the third day the nurse's attention was attracted, by the coldness of her patient's extremities, to the fact that she was getting worse. Simultaneously with this the patient complained of great weakness, and the breathlessness was much increased; cough severe and lips cyanotic, so that she could not lie down, but had to sit upright, in which condition she died at 7 P.M. on same evening.

CASE XVII.—*Mitral Insufficiency—Severe Breathlessness during Last Month.—Labour short and easy.—Patient got worse after Confinement; had irregular pulse, breathlessness, bloody sputa, and died on twenty-third day.—Post-Mortem: Œdema of Lungs.—The Right Ventricle greatly enlarged.—The Mitral Valves much thickened and cartilaginous.—Kidneys diseased.*

(Abridged translation from Hecker and Buhl, s. 175, Leipsig, 1861.)

Patient was twenty-four years old, and had been pregnant four years previously. The former pregnancy had been natural. She had suffered occasionally from breathlessness on exertion, but not severely till three weeks before admission. She believed herself at full term, and her labour had begun when she came into hospital. It was short and easy. The child was a female, weighed 5 lbs., and measured  $17\frac{1}{8}$  inches. Still, the heart was extremely perturbed. The contractions were so quick and irregular that complete arrest of cardiac action was feared. Examination after delivery evolved evidence of greatly increased transverse cardiac dulness, and a systolic murmur at the apex, with intensification of the pulmonary second sound. Liver dulness increased considerably. Mitral insufficiency was diagnosed. The patient did not improve much for the first week; the pulse continued at 160—180, imperceptible at the wrist, along with troublesome vomiting, bloody sputa, and great sleeplessness. On the eighth day a change for the better set in, the pulse came down to 96, and could be felt at the wrist; but still the vomiting, breathlessness, and bloody sputa continued. A relapse speedily occurred, and the patient succumbed on the twenty-third day. On section, the lungs were found very œdematous. The heart was greatly enlarged transversely, chiefly owing to increase in the *right ventricle*; its walls appeared dilated and fattily degenerated. Microscopical examination of the heart's substance showed general granular infiltration. The borders of the mitral valves much thickened, at certain points almost cartilaginous in consistence. Kidneys enlarged; cortical substance pale, and showing the characters



of parenchymatous nephritis in the second stage. Liver greatly enlarged, nutmeg-coloured.

CASE XVIII.—*Mitral Insufficiency.—Shortness of Breath and Palpitation during the latter months.—Delivery easy and quick.—After Delivery serious Chest and Cardiac Symptoms.—Recovery.*

(Abridged translation from Spiegelberg, *Archiv für Gynäkologie*, Bd. ii.)

Patient well-built but dusky-looking had, with good nursing and careful management, got through her pregnancy, and had arrived at the full term, when she was delivered safely and speedily, with nothing further of a disagreeable nature during the latter months than shortness of breath on exertion, and palpitation. Shortly after delivery her pulse, which was not frequent, became strikingly irregular, and intermitted at variable intervals; but still the arteries were moderately full and tense. After a few hours oppression of the chest and breathlessness set in, which increased momentarily to orthopnoea. Even at a distance mucous râles were audible. The radial arteries became small and slightly tense, the pulse-wave weak and enormously frequent (140—150), and the face cyanotic. Examination of the thorax showed considerable congestion of the pulmonary vessels, and consequent serous transudation into the bronchi, abnormal extension of cardiac dulness to the right, the apex beat in its normal situation, a loud blowing murmur following the impulse at the apex, which, however, gradually became less distinct as it was followed upwards. Abdomen free; urine scanty and albuminous. Second sound at apex markedly weak, becoming stronger at midsternum and towards the right. Over pulmonary area both sounds clear, the second neither intensified nor accentuated. Under the tormenting addition of a dry cough, during next two days repeated attacks of dyspnoea came on, which disappeared under the continued use of small amounts of digitalis, with morphia and saline purgatives. Symptoms disappeared, and patient was discharged on tenth day.

Cases XVI., XVII., and XVIII., which we have now recorded, are examples of the serious results that may follow severe cases of mitral insufficiency, when complicated with pregnancy. In Dr. Linton's case (XVI.), the starting-point for the serious symptoms was a trifling attack of bronchitis during the third month of her first pregnancy. From this, however, as the record informs us, she got greatly better, and yet the breathlessness continued to torment her, becoming gradually worse as the labour advanced, notwithstanding very careful management. The exposure to the external air on a single occasion in January, with the exertion of a walk of a few hundred yards, was sufficient to bring on such an amount of dyspnœa that the patient had almost to be carried home. As usual in such cases, premature labour came on, occurring in this instance at the seventh month. The labour, as is also usual, was easy. A short period of deceptive improvement followed delivery. But only three days after delivery symptoms of extreme dyspnœa and weakness set in suddenly, no doubt due to suffocative pulmonary œdema, and death took place after a struggle of nine hours' duration. Besides showing the extreme danger that may arise in connexion with a badly-compensated mitral lesion during pregnancy, the record of this case teaches that the risks cannot be expected to terminate with delivery, but are equally liable to occur during the lying-in period.

Case XVII. emphasises the same observation. We have in its history the record of a severe mitral lesion, of incompetency giving rise to very aggravated cough and breathlessness during the last month of a second pregnancy. These symptoms attained a maximum of intensity during delivery, which, however, was short and easy. The usual observation was made that during the labour the heart became extremely irregular, so much so indeed as to seriously threaten the patient's life. Delivery was, however, not followed by any real improvement of the symptoms. Congestive bronchial catarrh, with bloody sputum, and symptoms of pulmonary œdema, with enlarged liver, and an accentuated pulmonary second sound, all bore evidence of congestion and increased tension within the pulmonary circuit. An illusory

indication of betterness on the eighth day was followed by a speedy relapse, under which the patient succumbed on the twenty-third day after delivery.

In this case, post-mortem examination was able to test the accuracy of the observations and diagnosis during life, and it showed the lungs to be extremely œdematous, and the heart enlarged greatly, the main source of enlargement being the right ventricle, which clearly in this case was not able to hold its own against the regurgitation from the left ventricle, and hence the pulmonary troubles. The left ventricle was not only enlarged and dilated, but its muscular tissue had begun to be structurally degenerated. Though we have not, in Dr. Linton's case, the evidence of post-mortem examination to go by, the symptoms of the two cases are so very much alike that it appears to me we might fairly assume that in all probability the right heart here also had been dilated and weak. It seems to me that if we grant that the left ventricle does hypertrophy during pregnancy, we have an explanation of the great tendency that cases of this kind exhibit to go wrong in the latter months. For we know that dilatation is found to commence first in cardiac cases with the right auricle and ventricle. If now it is true, as the observations of Larcher and others show, that the left ventricle during the latter months of pregnancy hypertrophies, whilst the walls of the other three chambers do not, and if before the pregnancy the right ventricle has already become barely or imperfectly equal to perform its usual function, it is obvious that, if it is called upon without obtaining any fresh strength to propel an increased amount of blood through the lungs in the face of a regurgitant stream through the left auriculo-ventricular orifice, both increased in amount and under the increased tension it acquires from the contraction of the hypertrophied left ventricle, the right heart must come to suffer more and more, and to be less and less competent to maintain the lesser circulation. From this state of matters would arise the œdema of the lungs, the pulmonary infarctions, and the congestive form, as also the persistent nature of the bronchitic catarrh, which we find associated with pregnancy when complicated with chronic heart disease.

Further, assuming a tolerably constant hypertrophy of the left ventricle, and a dilatation and weakening of the other chambers, we find an explanation of why delivery does not give that amount of relief in mitral lesions that we would, on a superficial consideration of the case, expect. For it must take a considerable time for the left ventricle of the heart to become reduced in bulk to its normal size, and meanwhile the dilatation of the right side is increasing, and the pulmonary lesions are becoming more and more aggravated, till by-and-by the patient's condition is irreparable. When we think of the slight changes that an easy labour impress upon the circulation, when the bearing-down efforts which chiefly affect it are weak, we can easily understand how such cases get quietly through the process of delivery, though they gradually succumb to the continuously disturbed condition of compensation operating after parturition is completed. When the labour pains are at all severe, we find their effects evinced by profound irregularity of the heart's action. Those cases that are decidedly relieved by the completion of labour are, no doubt, such as have still a powerfully-acting right ventricle, with possibly also less incompetency of the mitral, for we can seldom with certainty determine by signs during life the exact amount of insufficiency of a valve. Spiegelberg's theory of suddenly disturbed relative pressure at the moment of delivery seems to me inapplicable as an explanation of such cases.

Case XVIII. is so nearly a counterpart of Case XVII., that I forbear to comment on it further than to point out that there was in it a great amount of increased cardiac dulness to the right, and that Spiegelberg's treatment by saline purges, opium, and digitalis appears to have given this patient some relief.

Pure mitral insufficiency, however, would appear to me to be less dangerous than stenosis, or particularly when stenosis is complicated by it, because in the case of mitral insufficiency the tension on the pulmonary circuit is taken off immediately on the cessation of the cardiac systole; whereas, in obstruction of the mitral, it is continuously acting during both the systole and diastole.



CASE XIX.—*Insufficiency and Stenosis of the Mitral.—Embolus of the Artery of the Sylvian Fissure.—Labour without any very serious Symptoms, except on the part of the Respiration—Renewed Embolism.—Ultimate partial Recovery.*

(Abridged translation from Ahlfield, *Archiv für Gynäk.*, Bd. iv. p. 159.)

Patient thirty-eight years old ; primipara ; exerted herself exceedingly when at work, once during the third month, and again during the seventh month of utero-gestation, and in consequence suffered much from violent pains in the hypochondrium. Otherwise she was well during her pregnancy. She had suffered from palpitation and severe headaches six months before the commencement of her pregnancy, but had had no other bad symptoms. During the period of utero-gestation the palpitation had diminished. In the beginning of the ninth month (2nd March, 1868) she was suddenly seized with giddiness, and became unconscious and hemiplegic on the right side. Her speech was inarticulate, and the extremities on the right side were swollen. A few days in hospital were followed by marked improvement in all the symptoms. The movements on the right side were very defective, but sensation had returned to it completely on the 17th March, when she was taken to the Midwifery Institution at Leipsig to await her confinement. On examination at this time the lungs were found normal. Cardiac dulness, transversely  $3\frac{3}{4}$  inches from left border of sternum, perpendicular from upper edge of third left rib to upper edge of seventh ; heart's impulse in normal situation, but somewhat diffused ; præcordial thrill present ; auscultation over the left ventricle reveals a distinct systolic murmur, replacing the first sound ; the second sound clear ; the sounds of the right heart and of the aorta are normal ; the pulmonary second sound is strongly accentuated. On 20th of March, at 6 o'clock P.M., the respiration rose to 48 per minute. There were troublesome symptoms of abdominal distension, for which a dose of castor oil was administered. At 8 P.M. labour began. The pains were at first powerful,

so that the cervix was fully developed and the outer os dilated within twelve hours. In the second stage the pains slackened so much that labour had to be completed by traction on a foot, which presented. Immediately after delivery the frequency of respiration sank, and the patient went into a tolerably quiet sleep. On the following day the patient had a renewed attack of embolism, but ultimately so far recovered as to be able to leave the hospital on 7th July.

We find in Case XIX. another of the leading dangers that chronic disease of the heart is apt to bring in its train, more especially when it occurs in connexion with pregnancy and parturition. I mean embolism. We have already noticed its occurrence in two of our cases—the second and third. In the one under consideration it occurred twice, and yet its results were so far recovered from that the patient was able to leave the hospital in less than four months after delivery.

It is surprising to find that embolism has occurred so seldom in the cases before us when the conditions that ordinarily give rise to it have been specially prominent, as there is no doubt of its relatively increased frequency of occurrence in connexion with cardiac lesions. There is as little doubt, however, that it is when the endocarditis, which gives rise to the cardiac lesion complicating the pregnancy, is of recent origin, or when the endocarditis is of the ulcerative form, that embolisms are most apt to occur. In so speaking I do not include septic embolisms, which are too well proved to appear in connexion with puerperal phlebitis of a pyæmic character, and to be the medium of spreading the lethal disorder to distant parts of the system at the same time. I refer merely to simple non-septic plugging of arteries, such as arose in the present case. I have been astonished that it has not occurred oftener among the cases which we have collected. I have not been able to find a single symptom in any of these cases to indicate thrombosis or embolism of the pulmonary artery, although under such conditions thrombosis of the latter vessel, one would think, would be a very likely result, if the

accident were as common a probability as Dr. W. Playfair would seem to believe. I have serious doubts, however, respecting the views urged by this distinguished obstetrician on that subject, and am far from being convinced that his argument from the appearance of a phlegmasia dolens some days after, or coincident with symptoms of embolism, or, if you like, thrombosis of the pulmonary artery, proves that they were due to a common cause acting at once on the pulmonary artery and in the veins of the limb affected. I am much more inclined to believe that in an obscure abdominal phlebitis a common origin for both conditions would usually be found. At any rate, we have so many possible sources of plugging of the pulmonary artery, such as the existence of a dilated right auricular appendage, or the presence of a clot in a varicose vein in some part of the body, that I am loth to accept the probability of spontaneous coagulation of blood in the pulmonary artery even in hæmorrhagic cases, except on irrefragable post-mortem evidence.

The only case among those that I have recorded in which death might probably have arisen from embolism of the pulmonary artery is the seventh one, which I extracted from Ramsbotham's *Midwifery*. It is, however, to be noticed that though it is to be presumed the lungs were examined with great care, as the condition of the heart, which does not seem to have been suspected before death, is noted with considerable accuracy, there is no mention made of any plugging or of any large clot in connexion with the pulmonary organs. It is merely stated that the lungs were healthy in character and gorged with blood.

In fact, severe embolism as well as thrombosis of the pulmonary artery would seem to me to have been considerably overrated in regard to their frequency in connexion with delivery. They belong to the class of loud-sounding terms that are apt to get fashionable, and to be used as a satisfactory explanation in cases of sudden death, even when the presumption is that some other cause may have quite as likely led to the fatal issue. The frequent occurrence, however, of small emboli in the pulmonic circuit in connexion especially

with cardiac disease, which give rise to more or less disturbance in the lungs, no person who for a moment considers the conditions that may give rise to embolism can doubt. It is difficult to determine how many of the pulmonary infarctions constantly found in connexion with cardiac disease are due to embolic causes.

It is to be remarked that the physical signs, as given by Ahlfield, are somewhat defective. Except on the score of præcordial thrill alone it is difficult to see how he satisfied himself that this case had stenosis as well as insufficiency of the mitral. Certainly the rhythm of the murmur given by him is not that of the auriculo-systolic murmur. It is also to be noticed how exaggerated the cardiac and pulmonary irregularity became during the labour. But here the heart was able, after the conclusion of the extra work associated with delivery, to regain its regularity of action.

*(To be continued.)*

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## ON MORPHIA AS A PARTURIFACIENT.

By ARTHUR WIGLESWORTH, L.R.C.P.

*(Read before the Liverpool Medical Society.)*

To the general practitioner actively engaged in the pursuit of his profession there is hardly any branch of it of such importance to him as the practice of obstetrics, not only on account of the great interests that are always, more or less, at stake to those immediately concerned, but to himself also, because the practice of obstetrics necessarily involves a complete renunciation of other duties for the time being, and the subserviency of all other matters to the one case in hand. We all know how great is the inconvenience of being summoned to labour when just about to commence our daily rounds; we have experienced the weary waiting, the often unexpected delay, the urgent desire to be released from our attendance, and the hourly disappointment of our hope for a speedy termination of our duties, combined with that natural anxiety on our part, which always exists when we find a protracted case in hand; therefore, any additional



light which can be thrown upon this branch of our duties will, I am sure, be gladly welcomed.

It is with this view, therefore, that I venture to bring forward the result of some thoughts that passed through my mind after reading the extract of a paper by Dr. P. C. Barker, of New Jersey, U.S., America, and published in vol. lx. Braithwaite's "Retrospect," entitled "The Action of Opium upon the Uterus, and particularly as a Parturient Agent."

It has occurred to us all, in our obstetric practice, to be called to a patient in active labour, and upon examination to find the os uteri more or less dilated, but in such a condition of rigidity that, however active and strong the uterine contractions may be, and however forcibly expulsive the efforts of the patient, the rigidity prevents the progress of the labour for an indefinite time, but ultimately it is completed in one of two ways: either by a very gradual relaxation of the rigidity—often occupying hours,—or else by sudden and complete relaxation, the termination of the labour occupying only a few minutes.

It is to this condition of the os uteri, and the means taken to overcome it, that I am desirous of drawing your attention.

And first let me recal those two conditions of the os uteri, which all must have noted as occasionally existing in different degrees in cases of labour, one in which the uterine lips are extremely thin, the other in which they are preternaturally thick; consequently, in cases of rigidity you may have either one or other of these conditions to deal with, varying, however, in degree.

It will facilitate the explanation of my views if attention is directed to the structure of the muscular portion of the unimpregnated uterus.

The principal portion of the muscular substance of the uterine body is composed of unstriated fibres, arranged in three layers—the internal, which are circular; middle, mostly longitudinal; and external, which are chiefly accessory to the middle layer. But in the cervical portion of the uterus they are somewhat differently arranged. There the circular fibres

form the largest layer, and are in the middle, and form the so-called internal and external sphincters of the uterus; whilst the longitudinal are placed externally and internally, interweaving with the circular bands at the os externum and internum. (Stricker, vol iii. p. 476.)

The os externum and internum, or the external and internal sphincters of the unimpregnated uterus are, however, in a somewhat elementary condition, very different indeed to what we find in the gravid uterus at full term. Then we find a powerful sphincter muscle composed of the unstriated muscular fibre, uncontrolled by the will, and retaining the whole contents of the uterus, acting in a similar manner to those fibres placed at the pyloric orifice of the stomach—viz., to restrain for the time being the escape of the contents. The powerful nature of the circular fibres of the os uteri is well adapted for the object in view—viz., to retain the whole of the uterine contents within the uterine cavity against all opposing forces, until the term of foetal life has arrived; then, in accordance with the law of Nature, these fibres relax, to allow the passage of the foetus and appendages. In a normal condition of labour the cervical circular fibres slowly and gradually relax until full dilatation is accomplished, and the passage of the head and body takes place. But in certain cases a different condition of things exists. After the os uteri has opened to an extent varying in size in different cases, it fails to dilate further, and, notwithstanding the strongest uterine contractions—notwithstanding the most forcible expulsive efforts of our patient—it refuses to dilate beyond this point, and the natural progress of the labour is consequently delayed.

It is to this condition of the os uteri—called a “rigid os,” “whipcord os,” “undilatable os”—that I am desirous of calling attention; and I believe, and the object of this paper is to show, that this condition may be dependent upon two causes—one direct, the other indirect, or immediate and remote; the first being the result of some morbid state of the “os” itself; the other due to reflex action dependent upon systemic causes. And, further, that both these causes may act in producing a spasmodic condition of the circular

fibres of the os uteri, and consequently a retardation of labour ; for so long as this spasm exists, progressive dilatation is retarded, unless indeed the system becomes so completely prostrated that there is not sufficient nervous energy left to allow of its continuance.

In order to demonstrate this, I must refer to analogical conditions of the general system of the body which bear upon the point, to illustrate my views.

There is a condition of the vagina termed vaginismus. In this morbid condition the sphincter vagina is in such a state of irritability that it is frequently impossible to introduce either a finger or a speculum into the vagina ; and even in milder cases, when either of these may be introduced with comparative ease, yet upon attempting sexual congress, the immediate increased flow of blood to the part, and the nervous excitement consequent upon the act, so increases the spasm, that the natural accomplishment of the act is completely prevented.

Now the cause of vaginismus, as we all know, may be found either locally or systemically. In the first instance, the "fons et origo" may be a small fissure or minute tumour, chronic uterine inflammation, or even excessive irritability of the vaginal walls themselves. And it may also be caused systemically by a nervous, irritable, unhealthy condition of the body, or even by direct nervous excitement. Another instance of sphinctal spasm will readily occur to the mind—viz., spasmodic retention of urine. Locally we find gonorrhœa the chief excitant, and systemically the cause is frequently cold, alcoholic abuse, &c. We are also familiar—and many of us practically so—with that condition of the mind which, from nervous agitation or excitement, precludes the act of micturition, and, notwithstanding the most forcible expulsive efforts, the nervous spasm cannot be overcome.

Spasm of the sphincter ani may also serve as an illustration. Fissure or rectal ulcer may be the local excitant, while systemic disturbance *may* also be the cause.

But there are two other apertures also the subject of spasm, which may perhaps be better illustrations to take, as they are both entirely independent of the will. The struc-

ture of the pylorus is as nearly as possible analogous to the structure of the cervix uteri at full term as we can imagine. The function of both is the same—viz., to detain the contents of the respective cavities of which they are the guardians until the proper period arrives when their circular fibres should relax to allow the contents to pass through the orifices. Now we know that ulceration just at the pyloric orifice of the stomach will frequently cause spasmodic closure of the pylorus and the rejection of gastric contents; and also that the entrance of unsuitable matters into the stomach will cause contraction of the sphincter, often retaining these matters till rejected by vomiting. And we further know that from systemic irritation, or nervous distress, food that has been partaken of hours previously is retained in the stomach by the action of the pylorus until rejected. I know of an instance in which the rejected contents of the stomach consisted of a perfectly undigested meal partaken of more than twenty-four hours previously. Nothing but a spasmodic condition of the pylorus, induced by Nature herself, could have prevented the gastric contents passing into the duodenum and onwards. The other condition of spasm is closure of the glottis—laryngismus stridulus—a disease essentially of childhood, which is produced by reflex action, induced by derangement of the stomach, bowels, or by the irritation of teething; and occasionally the closure is so completely maintained, notwithstanding the most violent efforts of the powerful inspiratory muscles, that death is the unfortunate result.

These cases then indisputably prove that there exists occasionally a spasmodic condition of the muscular fibres that constitute sphincters, and that this induced spasm may vary in duration, and may be called into activity either by direct irritation or by reflex action induced by systemic or nervous derangement.

If then this effect is produced at every aperture of the body guarded by bands of muscular fibres, I do not see why it may not be produced in the circular fibres of the cervix uteri, provided we have as causes the same or similar excitants. Indeed, considering how plentifully the uterine



body and its cervix are supplied with sympathetic nerves, it would be strange indeed if it alone, of all the organs of the body, was to be exempted from spasmodic contraction.

I must here call attention to a statement of that celebrated obstetrician, Dr. Ramsbotham, which is in direct contradiction to the above view, but which I think you will perceive may be explained by the fact that Dr. Ramsbotham has mixed up two classes of rigid os uteri, which I hold as perfectly distinct, requiring totally different treatment. In his work on "Obstetric Medicine" (3rd edit. p. 225) he states that this condition of rigidity does *not* depend upon accidental spasm, but upon "an *originally* firm, hard, rigid, unyielding texture." Strangely, however, only three pages further on (227) he says: "Under a state of preternatural rigidity of the os uteri, it not unfrequently happens that, without any apparent cause, and independently of any means used, sudden relaxation takes place, and from that time the labour progresses with much greater rapidity." Therefore, in the face of the previous assertion that this condition is *not* dependent upon spasm, we have the admission that the relaxation is sudden in some cases, and the fact of its being sudden shows that it cannot be the *gradual giving way of hard, rigid, unyielding structure*. We must therefore examine this view of the subject for an explanation, and I have no doubt that these opposing statements can be so reconciled as to fully support the views I am endeavouring to enunciate. There is doubtless a condition of the os uteri, most aptly described by Dr. Ramsbotham as a "firm, hard, rigid, unyielding texture," and this condition will under no circumstances give way suddenly, save and except by rupture or incision. It will be found nearly as rigid during the interval of pains as it is during the strongest uterine contraction. The causes of this class of rigidity are, invariably, structural changes, and it is this class that I think Dr. Ramsbotham means when he speaks of a "firm, hard, rigid, unyielding texture;" but in those cases of rigidity which I assert are solely due to spasm, we find a firm, hard, rigid, unyielding condition *only during uterine contraction*; but, when the pain has subsided, we are often able to stretch

the os uteri in various directions with either more or less facility. Rigidity or firmness of the os uteri, of course, always exists in a more or less degree during uterine contractions, and is, I opine, a wise provision of Nature, its object being to prevent a too speedy exit of the uterine contents, for it is familiar to all that a speedy completion of labour, from first to last, is liable to be followed more or less by hæmorrhage and indirectly by other disasters.

We may have, then, two causes to account for the non-dilatation of the cervix uteri after labour has more or less progressed—one the result of structural change, as inflammation with deposition of plastic material, cancerous deposit, fibroid tumour in cervix, or other interstitial changes ; the other, the result of a spasmodic condition induced by either local or systemic disturbance or sympathetic action.

Our inquiry must then be directed with a view of ascertaining what condition, uterine or systemic, can produce such a result as a rigid cervix. Locally, I believe an ulcerated condition of the os, co-existing with pregnancy and parturition, may prove a sufficient excitant of spasm, because as the ulcerated surface becomes involved in the dilatation it must naturally involve also the nerve extremities, which are already in an excited or unhealthy condition. The same may be said of that fissured condition of the cervix uteri which we so frequently find co-existing with spasm. Vaginitis may also give rise to such a condition, or a sub-acute inflammatory state of os and cervix, and as a fertile source we may have that painful and morbid condition termed irritable uterus, which manifests itself in frequent irritable spasmodic contractions, taking place before the commencement of parturition, days or even weeks. We are often told by our patients they have been in labour for two or three days, and an examination discovers, very frequently, an os uteri dilated to the size of sixpence, and often rigid, this condition being dependent upon an irritable condition of the uterus generally. Any of these conditions (and others probably) may exist, and reasoning by analogical reference to what occurs to other sphincters under similar conditions, we can

understand how they may give rise to spasm from direct irritation.

With regard to systemic derangement acting by reflex agency, we might overhaul almost the whole body. Hæmorrhoids, overloaded colon, renal mischief, hepatic disorder, derangement of the stomach, cerebral disturbance, mental anxiety, or a highly sensitive condition of the nervous system ; each or any of these do produce by reflex agency disturbance of other organs, and, by parity of reasoning, can produce uterine irritation.

But, to my mind, the very remedies that have been advised and used to produce a relaxed condition of the os uteri, entirely favour the view that the condition indicated is purely one of spasm.

*Tartar emetic* in days gone by was very extensively used, and is to a certain extent now, but by no means with invariable success. But when successful, the result was and is attributed to the depressing effects of constant nausea, just in the same way that before the days of chloroform it was administered to muscular subjects to facilitate reduction of dislocations, by producing depression of the system, and consequently muscular relaxation. It may, however, act beneficially as an emetic, by ridding the stomach of acrid secretions. But it could *not* act beneficially if the rigidity was *not* the result of spasm, but of a "hard, firm, rigid, unyielding structure." Nevertheless, we ought to hesitate before producing debility and exhaustion in a parturient woman.

*Bleeding* (in days happily gone by, or nearly so) was strongly recommended. A case is on record of a lady being bled to syncope three times, but without the desired effect ; and death unfortunately ensued. Nevertheless, bleeding to faintness, or even actual syncope, was regarded as essential, and even in so late an obstetrical work as Leishman's it is recommended to take from fourteen to sixteen ounces of blood. Taking into consideration, however, as we must always do, the possibility of post-partum hæmorrhage, I think the less we have to do with the abstraction of blood in these

cases the better, more especially when we also take into our reckoning the possibility of the desired effect not being produced, and further that we thereby give or enlarge an opening for the entrance of metritis, septicæmia, and those other morbid actions which are so liable to ensue upon a long, lingering labour, complicated with exhaustion. When, however, bleeding has proved useful, we must put it down to the well-known effect it has in relaxing spasm.

*Tobacco enemata* have also been recommended, but considering the doubtful and uncertain effects, combined with the danger that has ensued from their use in other cases, the exhibition of them will hardly be prudent. Here again the desired effect would only be produced by exciting nausea and depression—two things very undesirable to induce under the circumstances.

*Rubbing* extract of belladonna upon the os uteri has also been advised, upon the principle that it aids in relaxing sphincters: also from its peculiar effect upon the ciliary muscle. But its application may prove dangerous, and moreover the effect is doubtful.

*The hip bath* has also been recommended (M'Clintock, 269), but warm hip baths are not always at hand or convenient.

*Chloroform* and chloral hydrate have also been used in rigidity, and at first sight we might expect a beneficial effect. But experience teaches us that this is not so invariably; and I look for the explanation of this in the circumstance that if the spasm is severe its relaxation will not be effected unless the administration is carried to its fullest extent, and then if this is done there is a great suspension of uterine pains, a not desirable effect.

All these and numerous other remedies have been tried and recommended more or less empirically, and all have more or less failed to fulfil what was required of them, and when successful the desired action would often be in exact ratio to the amount of exhaustion induced, and consequently in their very action undesirable and prejudicial to the speedy recovery of the patient.

I will now mention the drug that forms the subject of



this paper—viz., “morphia;” and it would *à priori* appear that morphia was the very drug of all others not likely to be employed when we were desirous of completing a labour with as little delay as possible to ourselves, and with benefit to our patients. Experience, however, will teach us differently, premising, however, that we exhibit it only in suitable cases.

In such cases we need have no fear whatever that labour will be permanently stopped, as stated by Dr. Ramsbotham. In his work, already referred to, p. 225, he says: “The danger of opiates exhibited under labour is, that the uterine contractions may be so entirely removed through their agency *as never again to be established*, and thus the case may be converted into one requiring the use of instruments, perhaps even of a destructive kind.” Now, with all due respect to such a great authority, I think practical experience has proved this to be a fallacy. We might as well expect that a full dose of an opiate given in a case of spasmodic retention of urine would so paralyse the bladder that the natural efforts to relieve itself would never return, and the patient be ever after subjected to the use of the catheter. Doubtless if you give a full dose of opium in an essentially natural progressive labour, you may suspend uterine action; but the suspension is only *temporary*; and as surely as the effect of the opiate passes away through the natural channels, so surely and so inevitably will uterine action recommence. It is most unphilosophical to assert that opium in *any* form can permanently suspend uterine action. Nay, I would go further, and assert that if you continued to exhibit this drug in as large doses as would be compatible with the safety of the patient, the uterus, like any other organ of the body, would become inured to its presence, and labour would recommence and be completed.

To ascertain the action of morphia in a perfectly natural case of labour, and in a woman whose parturient action was always prompt, I administered one-eighth of a grain of muriate of morphia, when the os was about half dilated, and the result was a cessation of uterine pains for three-quarters of an hour. I then gave a dose of ergot, and labour recom-

menced. Had I waited until the morphia had been eliminated through the natural channels, the uterus would doubtless have taken upon itself spontaneous action.

If, then, upon examining our patient we find a rigid os uteri depending upon spasm, either direct or induced by reflex agency, if the pains are full, strong and regular, and yet no increase in the dilatation, but a hard constricting cervix with each access of parturient action, then we have a typical case calling for our remedy. If under these circumstances we give our patient from  $\frac{1}{8}$  to  $\frac{1}{3}$  of a grain of morphia, we shall frequently find that by the time that the morphia has been fully absorbed into the system the constricted os will feel more supple, will gradually relax, and the pains continuing unabated, labour will be completed, provided that no other impediment exists to delivery.

Such a complete change occurring in such a remarkable way, and frequently in a very short space of time, naturally suggests the looking for an explanation, and the inquiry therefore arises, How does morphia act to produce such results without impairing uterine action? If we take it for granted that the condition of the uterine cervix is dependent upon spasm, then we must necessarily expect that the agent employed will act in such a way that this spasmodic condition shall be overcome or removed, and of all remedial agents none act so efficiently and surely as morphia in removing spasm. We have only to look at the effects obtained when this drug is fully exhibited during the pain and spasm that exists in the passage of biliary or renal calculi, or the relief obtained in spasmodic retention of urine or in colic, to endorse our opinions as to its great efficacy, and this effect is produced by its action upon the muscular fibres of the morbid part, and we regulate our dose in direct ratio to the violence of the spasm and pain. But we find that in the cases under our consideration, although the opiate relieves the rigidity of the muscular fibres of the cervix, nevertheless it does not impair the strength or frequency of the uterine pains. In looking for an explanation of this phenomenon, I think we shall find it in the principle that guides us in the administration of our remedies generally, or rather

in their therapeutical effects. For we find that a drug will act upon some morbid process existing in an organ, without interfering with or deranging the natural functions of the organ itself, as it might do if no morbid condition existed. For, if I may so explain it, the drug exhibited has a special function to perform, or a part upon which to expend its virtues, and it only fulfils that function, and acts upon that part.

But if no morbid action be present, then the drug, having no proper destination, acts as a foreign body and produces deleterious effects. In short, the medicament which was beneficial in the first instance becomes prejudicial in the second. Various inflammations, spasms, neuralgias, or other morbid actions in the body, are relieved or cured by remedies acting beneficially upon the parts, either directly or through the nervous centres involved, the other conditions and functions of the body being comparatively unchanged; but prescribe these remedies in healthy subjects and the results are disastrous, and even death might ensue.

Applying this, then, to our subject, we have a spasmodic condition of the os uteri, and upon this morbid condition the opiate exhibited acts, and on no other. The action of the uterus in a parturient woman being essentially natural, and consequently healthy in its operation, would not therefore be involved in the action of the remedy, separating, as we must do, the unnatural spasmodic condition of the cervix from the natural uterine contractions; but if the opiate was given when no spasm existed, then, as already pointed out, it would be likely to expend its force upon the uterine pains, probably through the medium of the medulla oblongata, and cause either a modification of them or a temporary cessation.

Whether this is the true explanation or not cannot, in our present state of knowledge, be accurately determined; but that experience proves that these results will follow, is undoubted.

I cannot, however, go so far as Dr. Barker, and assert that the action of morphia is twofold, and that it produces relaxation of the circular fibres, and contraction of the longitudinal. This seems to me to be to a certain extent

unscientific reasoning, for the os, cervix, and fundus of the uterus are all supplied with the same nerves; and it is somewhat unphilosophical to assert that in the same organ supplied by the same nerves the effects of a remedy acting through them should be in direct antagonism, being both at the same time contractile and dilatile; whereas we can well argue, without any scientific error, that morphia may relax spasm in an organ, and yet not interfere with a natural action co-existent therein.

Evidence in favour of this view is to be found in certain cases of dysmenorrhœa. One cause of this complaint is an inflammatory or spasmodic condition of the cervix uteri, which prevents the menstrual flux escaping, causing thereby acute spasmodic pain. All of us are aware that a full dose of opium rarely fails to afford speedy relief; and the explanation afforded us is, that the opiate relieves the constricted cervix, and, thus allowing a free exit for the menstrual fluid, pain in consequence subsides, the menstrual discharge continuing unabated.

This being a fact in the unimpregnated uterus, I do not see why the same conditions and results should be denied to the gravid uterus.

I will now detail the cases recorded by Dr. Barker, curtailing them as much as possible.

Patient, aged twenty-five, primipara. Os refused to dilate for 24 hours. Tartar emetic useless. Sulphate of morphia,  $\frac{1}{4}$  gr. Delivery effected in one hour.

Patient, aged thirty-five, multipara. Os rigid for 16 hours. Sulphate of morphia,  $\frac{1}{3}$  gr. Delivered in three-quarters of an hour.

Patient, aged twenty-four, primipara. Pains strong. Os undilatable. Sulphate of morphia,  $\frac{1}{4}$  gr. Delivered in three-quarters of an hour.

Patient, aged twenty-eight, multipara. Os half dilated and rigid. Sulphate of morphia,  $\frac{1}{4}$  gr. The finger was placed upon the os, and it commenced to dilate easily.

My own cases have been decidedly successful. I append a few.

Patient in labour with second child. Os dilated to size of



five-shilling piece, and during the absence of pain could be freely moved about, but upon the accession of uterine action extreme rigidity characterised the cervix ; half a grain of morphia caused relaxation and birth of the child in forty minutes. The os had previously maintained its rigidity for seven hours, and two doses of tartar emetic had been administered.

Another case similar to the above occurred almost immediately afterwards, and with similar results. In a case of primipara the os refused to dilate beyond half an inch in diameter ; one-eighth of a grain of morphia changed this, and the birth was completed in three hours. Here I had anticipated a lingering labour, from the rigid condition of the os, and great depth and thickness of the perineum. In none of these cases was uterine action even delayed.

A case occurred recently, similar to the above, but it required two full doses of morphia before the constricted os would yield, and then labour was completed in two and a half hours.

The last case occurred a short time since. Multipara, in labour for seven or eight hours. Os rigid since previous examination (three hours), and continued so ; one-eighth of a grain of morphia was administered, and the finger placed upon the os, and time noted. In five minutes the os yielded, and in seven the head had passed through.

I have had several other cases, but it would be useless to give details of them all ; enough, I think, has been shown to illustrate the value of the remedy, and its great superiority to every other hitherto advanced ; nearly all of them depending upon nausea and exhaustion for the desired result, this, however, acting without any deleterious effect whatever, and consequently invaluable in this respect.

In conclusion, I would advance these propositions.

1st. That the condition of the os as described is "rigidity from *spasm*."

2nd. That this spasmodic condition may arise from direct or indirect causes, producing, however, in both cases the same result.

3rd. That this condition may be removed by the adminis-

tration of morphia, having for its object the relaxation of the circular fibres of the os, without inducing either nausea or exhaustion.

I would, however, add a few words concerning its administration. The dose must be regulated with reference to three things: 1st, the physical condition of the patient; 2nd, the amount of rigidity; 3rd, the condition of the stomach.

With regard to the first, a nervous excitable temperament would in all probability require a smaller dose than a phlegmatic one, also if there was much exhaustion from a prolonged condition of rigidity.

2nd. A thick rigid os, combined with a phlegmatic condition of the system, would in all probability require a larger dose, or a repetition of doses, than in opposite cases.

3rd. The condition of the stomach. If the patient has freely partaken of fluids, and there is reason to believe that it is overloaded, then, unless vomiting is induced, a much larger dose will be required. In the case mentioned of relaxation following in five minutes, the stomach was perfectly empty, and it was to this fact that I attribute the very speedy effect of the remedy.

These suggestions are but bare outlines for the guidance of the administration. Each case must be treated according to the individual peculiarities and circumstances co-existent.

In those cases where the rigidity has been long existent, and there is commencing exhaustion without relaxation, and a subsidence of uterine action, I would suggest a combination of ergot and morphia; and if the views I have advanced regarding the action of the latter be correct, their effect would be the reverse of antagonistic. In one case in which I gave them combined the effect was almost magical.

Finally, I would remark that I consider these statements very elementary, but I trust I have sketched out enough for further investigation.

## THE TREATMENT OF POST-PARTUM HÆMORRHAGE.

By H. OTIS HYATT, M.D., Kinston, North Carolina, U.S.A.

HAVING just read a report on the discussion of Dr. Milne's paper on post-partum hæmorrhage, which was read before the Obstetrical Society of Edinburgh, November 22nd, 1876, and published in the March number of the OBSTETRICAL JOURNAL OF GREAT BRITAIN AND IRELAND for 1877, I am induced to lay before the British medical profession a method to which I have frequently resorted, and at the same time claim priority for first having used it.

In the eastern part of this State we have a medical society composed of country doctors, who live in a sparsely settled region, often several miles apart. The nearest instrument-maker is, so far as I am aware, 300 miles off. We are all general practitioners, and most of us poorly equipped to do general surgery and obstetrics. Consequently we are oftener than otherwise thrown on our own resources, and have to improvise means to do our work with from whatever material we can lay hands on. It was for this reason that I read at the November meeting of our Society (the Eastern N.C. Medical Association) in 1874 a paper entitled "Fifteen Uses for the Condom," from which I make the following quotation :—" Eighth" (use), "as a means of arresting post-partum hæmorrhage. For this purpose the Condom—or what is better, as it admits of very great distension, an india-rubber balloon, which may be bought at any toy-shop—is tied over the end of a Davidson syringe nozzle, and passed into the cavity of the flaccid uterus. It is then distended by warm or cold water ; by this means we bring pressure to bear directly upon the mouths of the bleeding vessels, which effectually seals them, and renders further hæmorrhage impossible. It might be objected to this method, that after the uterus had been distended it might refuse to contract. But this seems hardly probable, and, even should such an event occur, we can, after the woman has somewhat recovered, administer ergot in sufficient doses to produce contractions. As soon as the distension required to check the hæmorrhage is

reached, we pull the tubing from the syringe bulb and compress it (the tubing) between our thumb and forefinger; by so doing we have perfect control of the water in the bag, and can allow it to escape *pari-passu* with the uterine contractions."

Since the above was written I have lost no opportunity for testing the merit of this method of arresting post-partum hæmorrhage. In fact, I have used elastic pressure, either by means of a Condom, rubber balloon, or a Barnes's bag in all the cases of post-partum flooding that I have since attended, and have been so well pleased with the result that in July, 1876, I sent a short paper to the *American Journal of Obstetrics*, which was published in October of the same year. From this paper the following is a quotation:—"The procedure is simple, safe, and effective, and up to now has never failed in a single instance in which I have used it. It consists in passing into the cavity of the uterus a rubber bag, which is afterwards distended by means of air or water, preferably water, until it fills the entire uterine cavity. The bag will press in the direction of the least resistance, and adapt itself to the little inequalities of the placental site. We thus, without using any great amount of force, bring sufficient elastic pressure to bear upon the mouths of the bleeding vessels to effectually seal them, and render further hæmorrhage an impossibility.

"The hæmorrhage being arrested, we can leisurely direct our attention to inducing uterine contractions by kneading the uterus and the administration of ergot, either by the mouth or hypodermic injection. When uterine action sets in (and it occasionally will very soon, especially if ice water be used to distend the bag with), we can allow the air or water to escape *pari-passu* with the uterine contractions, or, better, allow it to remain. The bag being elastic, is easily moulded to the parts through which it has to pass, and will be expelled just as the bag of waters would, and at the same time continue to act as a valve to the bleeding vessels until the womb is so thoroughly contracted that further hæmorrhage will cease."

I then give the details of three illustrative cases, and con-



clude by using the following language :—" This method has several advantages over those generally used for the arrest of post-partum hæmorrhage. Even leaving out the elastic pressure, it is better than passing ice into the uterine cavity, should we be disposed to rely upon cold as a means of astringing the bloodvessels, and inducing uterine contractions. We can inject the bag with ice-cold water, and save the woman the annoyance of a cold bath to the buttocks, which will surely take place as the ice in the uterus melts, and the water runs from the vagina. Its advantage over pressing the placental site with the hand is considerable ; first, it is perfectly reliable, the distended bag will cover the entire site, which the hand will not always do ; and besides there is not the least danger of bruising the uterus as there is when one hand is placed upon the placental site, and is pressed upon by the other hand over the abdominal wall. Over the persulphate of iron injections its greatest advantage is its perfect harmlessness ; we run no risk of inducing metritis or puerperal septicæmia, and besides we avoid the disagreeable stickiness of the hands, which one is sure to have if they are brought in contact with the iron injection. But its chiefest and greatest advantage over all other methods is, that it can be more speedily resorted to, and does its work more quickly. One or two minutes is generally long enough to fully distend the bag, and check the flow. It is perfectly harmless, and the most awkward need not hesitate to resort to it. Even should the bag burst, which is the only accident that can possibly happen, we simply wash out the uterus, which cannot possibly do harm ; that is, if the bag had been filled with water, which is, I think, best and safest, though I have frequently used air, and had no accident."

During the same month (October, 1876) that my paper appeared in the *American Journal of Obstetrics*, there appeared in the OBSTETRICAL JOURNAL OF GREAT BRITAIN AND IRELAND a description of Dr. Chassagny's method of inducing premature labour, which was published in the *Archives de Tocologie* for May, 1876, from which the following is a quotation :—" But it is in post-partum hæmorrhage

that the results are more striking. The uterus is first emptied of all clots, and the bags are then introduced and dilated with water. The thin bag then insinuates itself into the uterus and completely fills it, compressing the open mouths of all the bleeding vessels. When the uterus commences to contract it may be allowed to expel the water, the open mouth of the tube being kept at a high level. There is thus perfect security that no cavity is formed into which hæmorrhage could take place. The author has saved by this method two patients who would otherwise inevitably have perished, all other means having been used in vain."

I have made these quotations, first, to show that I had not only resorted to elastic pressure to check post-partum hæmorrhage before Dr. Chassagny had, but that my method had been published at least a year and a half before his. In the discussion of Dr. Milne's paper, those methods that were most objected to were plugging and injections. This method which I have proposed will do away with the necessity of ever resorting to either. I think this is the very best and most reliable of all our means for checking post-partum hæmorrhage. It is true that ergot stands at the head of the list of hæmostatic agents, but it takes some time for it to act, whether introduced by the stomach or hypodermically, and during this time our patient may flow to death.

I have lately had an opportunity of subjecting this method to the most severe trial possible. I was called to see a lady who had just miscarried of a three and a half months' embryo. The placenta was attached high up, with probably a small part detached. She was bleeding freely, and was very weak and nervous. I attempted to force my hand into the uterus to remove the placenta. This gave her so much pain that she begged me to desist, and check the hæmorrhage as I had done on a former occasion. (This lady is the first on whom I ever tried this method, which was four years previous to this time.) I passed a Barnes's bag into the uterus, and distended it with water, gave her a large dose of ergot and morphine, and went to bed. Next morning strong expulsive pains set in, and I had the satis-

faction of seeing both placenta and bag thrown off before I left. She lost no blood after the bag was introduced. This is the first time I ever resorted to this method before the uterus had been emptied of clots and placenta; but should ever such another case present itself, I will resort to the same means, being fully assured that the result will be all that can be desired.

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## *Abstracts of Societies' Proceedings.*

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### OBSTETRICAL SOCIETY OF EDINBURGH.

*Meeting, Wednesday, 14th March, 1877.*

Professor SIMPSON, *President, in the Chair.*

Dr. UNDERHILL showed a foetus papyraceus which had been sent to him some time since by a friend in England. It lay with the legs doubled up on the body, the feet reaching to the face. The body measured from the vertex to the buttocks  $4\frac{1}{2}$  inches, and from the vertex to the umbilicus  $3\frac{1}{2}$  inches. The full length would be about eight inches. No history of the case was obtainable further than that it had been born twin with a well-developed, full-grown child, which survived. The foetus was squeezed to an unusual degree of thinness, and quite merited the descriptive title "papyraceus." The spine and ribs were easily made out on the back aspect, and the navel, with three inches of cord still attached to it, on the front.

Dr. RONALDSON showed a foetus with intra-uterine peritonitis and dilatation of bladder, uterus, and kidneys. One kidney was only partially developed. The child survived two days.

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### *Two Cases of Puerperal Pleuropneumonia.*

By ANGUS MACDONALD, M.D.

The following cases of singular interest occurred in my practice in the latter part of last year. As they were observed with a considerable amount of care, and as I cannot but think they are not of very usual occurrence, and as I believe they might serve for encouragement to some medical brother in charge of patients similarly affected, I have deemed it advisable to publish them.

It is to be noticed that though the one occurred in September and the other in December of last year, and though the first was entirely better long before the other took ill, so that there could be no relation of common origin in the cases, yet they present a wonderful number of points in common in regard to symptoms and course,

the principal difference being that the second was the shorter of the two, and did not present symptoms of phlegmasia alba dolens, which retarded so seriously the convalescence of the first patient. With these preliminary remarks, I proceed to record the cases.

CASE I.—*Pleuropneumonia*.—*Phlegmasia alba dolens*.—*Recovery*.

Mrs. P. L., Edinburgh, aged twenty-six, was confined by me of her second child on the evening of the 10th September, 1876. The child presented the vertex with the occiput backwards, and to the right sacro-iliac-synchondrosis, and the labour was extremely easy. Though I lived close to my patient's house, and was sent for early, when I arrived the head was well down in the pelvis, and one good pain effected forward rotation of the occiput, and completed delivery immediately after my arrival. The child was a healthy female, and did well. Mrs. L. did well also till the evening of the 14th September, when she had a rigor after some undue exertion. Still she passed a good night, and felt better in the morning. On the 16th and also on the 17th, her elder child was unfortunate enough to meet with a slight tumble on the stair, and on each occasion Mrs. L. was greatly, though quite unnecessarily frightened. In the course of Sunday (the 16th) Mrs. L. began to suffer from pain on the right side, just below the nipple. This at first was slight, but as it increased on the Monday (the 17th), I was sent for in the evening, as I had not thought it necessary to see her during the day.

I found her suffering much from the pain in the right side, as also breathless and pale. Temperature was  $101^{\circ}$ , respirations 40, and pulse 110. There was pain in the right shoulder, and the characteristic symptom of the pleuritic stitch. There was a demonstrable amount of dulness at the right base, both before and behind, more so behind than before, with feeble breathing, but no increase of vocal resonance, and neither crepitation nor friction. The lochial discharge was red in colour, plentiful in amount, and free from any disagreeable odour. The tongue was foul. Urine rather scanty, but it contained no albumen. I ordered a poultice to the side, and a Dover's powder to be taken.

18th.—Patient very much as on the previous night. No friction to be heard. Temperature  $101^{\circ}8$ ; pulse, 110; respirations, 40.

19th.—Patient passed a poor night, but feels slightly easier. Pulse 110; temperature,  $101^{\circ}$ ; respiration still 40; and pain in the chest slightly diminished. Expression of countenance anxious. Cough very slight. Dulness posteriorly decidedly increased, but no friction nor crepitation audible. In the course of this day the patient spat up a mouthful of red expectoration, and in the evening the temperature rose to  $103^{\circ}$ . The poultices were continued. Another Dover's powder was administered, and the patient slept a little better than on previous night.



20th.—Respirations 36; pulse 100; temperature in morning,  $101^{\circ}5$ ; in evening,  $102^{\circ}5$ . Expectoration characteristically prune-juice in colour, mixed with some gelatinous rusty sputum. It comes up with tolerable ease and in considerable quantity. Cough still slight. Pain on inspiration still present. No distinct friction murmur audible, though I heard what sounded suspiciously like a scrape once or twice below the right nipple. The dulness behind is markedly increased, passing up as high as the upper angle of the right scapula, and is very absolute. But the level of dulness does not appear to be altered by change in position. The dulness anteriorly is difficult to determine with precision, as the mamma is gorged with blood and also tender. But, so far as can be made out, it is not extensive. The breath-sounds are extremely feeble and short over the region of dulness. But there is no distinct crepitation ordinarily audible, though now and then I was convinced I heard a distant crackle. Neither is there increase of vocal thrill nor of resonance. No tubular breathing can be heard. The breathing on the left not markedly puerile. The same treatment continued. Diet light, and no wine.

21st.—Had a rather better night. Physical signs of right side about same as yesterday, only I heard with tolerable distinctness some crepitation over an area on the right back, bounded externally by the lower half of the right scapula, and internally by the spinal column. Slight increase of vocal resonance is also perceived there.

Morning pulse, 92; respirations, 33; temperature,  $102^{\circ}2$ .

Evening „ 96; „ 30; „  $101^{\circ}$ .

Dr. Matthews Duncan saw the patient at my request this afternoon. He thought he heard an indication of friction over the spot in front where I had previously thought I had heard it. We agreed to apply a blister (6 × 8) over the right side, and to give a diuretic containing five grains of nitre and a teaspoonful of Mindererus's spirit in each dose. There was some irritation of the urinary organs from the cantharides, though I had taken the precaution to insist on my patient drinking plenty of fluids during the night. There are positively no uterine symptoms to be detected.

22nd.—Patient feels on the whole better.

Morning pulse, 96; respirations, 30; temperature,  $99^{\circ}3$ .

Evening „ 90; „ 28; „  $99^{\circ}4$ .

23rd.—In the morning, pulse 84; respirations, 34; temperature,  $99^{\circ}4$ . The evening temperature, &c., not taken. Tongue more clean. Appetite a little better. Expectoration free. The sputum chiefly of the prune-juice character. Uterine discharge still red and copious, but it has no special foetor. There is now crepitation audible along the whole of the right back over the region of dulness, and there is also a certain amount of increase of vocal resonance.

24th.—Pulse, 84; respirations, 30; temperature,  $99^{\circ}$ . Patient

feels better. Dulness posteriorly absolute as high as the upper angle of right scapula, and it is considerably above the upper limit of the liver in front. Milk returning to the breasts. Expectoration still bloody, free, and copious ; comes up without much effort. There is a soft systolic mitral murmur distinctly audible at both the base and apex of the heart. I then left for the country, and my friend Dr. Playfair took charge of her in my absence.

On the 27th he reports as follows :—The front of right chest is clear on percussion, with an occasional râle. Posteriorly, the state of the chest is much as reported on the 24th. But on the left side, posteriorly, a dull patch is found to exist, stretching from the extreme base to a height of about three inches. The percussion note is peculiarly high pitched, and wooden in character. On auscultation, no fine crepitation is audible anywhere, only an occasional coarse râle with inspiration. Vocal resonance slightly increased over the dull area. Sputum still of the prune-juice colour. Perspiration is copious. Tongue, except at tip and edges, coated with a brownish fur, but it is moist. Appetite fair. Bowels moved twice to-day after taking a piece of Tamar Indien.

28th.—Had a tolerably good night, but sleep very broken. Complaints of stiffness of left leg and pain in the left groin. The leg is not swollen or tender, only a slight swelling can be felt in the groin, and this is tender on pressure. Sputum now mixed with mucus and not so red. Diet to be very light.

29th.—Improving on the whole. Pain in groin and stiffness of leg as yesterday. Lochial discharge has increased in quantity, and is of a brighter red colour than for days past. Sputum darker, and more mucus in it. Ordered two glasses of claret per diem.

2nd October.—Left leg swollen to about twice the size of the right ; pain in the groin continues. The femoral vein is felt to be hard, swollen, and very painful on pressure, and along the inner surface of the thigh the internal saphenous is found to be similarly affected. Along the calf of the leg the branches of the internal saphenous are also felt to be hard, swollen, and painful, but not so much so as the vessels higher up the limb. The general condition of the patient does not seem to have been much impaired by the onset of the phlegmasia, her health being if anything improved, except that she does not sleep well at night. The leg was now ordered to have a lotion of lead and opium applied to it constantly, and to be wrapped in cotton-wadding from the knee to the groin. A mixture of quinine and iron was also prescribed to be taken thrice daily.

3rd.—The flat wooden note has entirely disappeared from the bases of both lungs. On auscultation the respiratory murmur on the right seemed rather louder than natural, but no crepitation nor rhoncus audible, and vocal resonance does not appear to be increased. On the left side, about the middle of the lung, the breathing is remarkably bronchial, and accompanied by coarse crepitation on

inspiration. Vocal resonance over this area is much louder than on the right side. Above and below the middle of the lung the vocal resonance and the respiration approach the normal, but would seem if anything rather louder than in health. The sputum now almost entirely composed of mucus, with only a slight intermixture of blood.

8th.—I again took charge of my patient. I found the condition of the chest nearly normal. Not a trace of pain or other disturbance in the uterine region, but still a considerable amount of sanguineous discharge from the vagina. There is also some blood in the expectoration, but no moist sounds are audible in the chest. Left leg is painful. The veins of the groin are hard, and the leg slightly swollen. Pain also is complained of on pressure along the course of the large vessels in the thigh. There is great pain on pressure on the right groin, the veins feel corded and knotted, but there is little swelling of this leg. Pain is likewise complained of when pressure is made along the course of the vessels; but there is no enlargement of the superficial veins of this leg, and no elastic œdema. The legs are being fomented frequently, then rubbed with oil and laudanum, and wrapped in cotton-wadding. The tonic mixture and wine are being continued.

11th.—Condition very much as at last report. It is noticed that the soft systolic murmur still persists, being heard both at base and apex. It is, however, more distinct at the apex than at the base. The left leg is nearly free from pain; the right leg is in the same condition as on the 8th. Discharge from vagina has nearly ceased. No uterine tenderness. Patient sleeps better.

13th.—Right leg in region of thigh considerably swollen and painful on pressure, also œdematous at the ankle. Left leg quite well. Patient ordered ten minims of the tincture of the muriate of iron and 5 grains of the chlorate of potash every six hours.

15th.—Much improved.

19th.—Patient feels very comfortable. Tongue is cleaning. Lochial discharge slight, and now yellowish-white in colour. Swelling in right leg now quite gone. There is still a little tenderness on pressure in right groin, and along the course of the large vessels in the thigh. Ankle is free from œdema. Appetite good.

2nd November.—Patient able to be up. Expectoration still dark. She has, however, no cough.

29th December.—Mrs. L. still thin. Lungs both normal. Slight blow at apex of heart with the systole. Prescribed cod-liver oil for her. She has no cough, and eats tolerably well.

13th March, 1877.—Mrs. L. continues to do well. The first sound in mitral area is slightly muffled and prolonged, but there can scarcely be said to be a murmur present. The pulmonary second sound is somewhat intensified.

CASE II.—*Pleuropneumonia.*—*Recovery.*

Mrs. B., aged thirty-six, was attended by me during her second confinement on the 3rd December, 1876. Her first labour occurred on 12th November, 1875, and on that occasion I had to terminate the case instrumentally, and needed a considerable amount of traction effort to clear the head of the bony outlet.

On the present occasion I was called at 7 A.M., and found that my patient had been in tolerably severe labour since 2 A.M. The os was fully dilated, and I ruptured the membranes immediately after my arrival and gave chloroform. The head presented in the right oblique diameter of the pelvis, with the occiput posteriorly and towards the right. The head had nearly, but not quite, come down to the floor of the bony pelvis, and the anterior fontanelle was very markedly lower than the posterior. In the course of the following two hours, however, under the influence of tolerably powerful pains, the occiput was pushed down and rotation of it forwards effected; and instead of, as before, too much extension of the head existing, an abnormal amount of flexion was developed. Being convinced by this mechanism that the outlet of the pelvis was abnormally tight for the head, also finding that the latter was not making satisfactory progress, I applied forceps, and, after one or two pretty strong pulls, succeeded in drawing the head through the outlet. I noticed that the posterior parietal bone had been pushed over the anterior in the line of the sagittal suture. The child was a healthy female, and did well.

On the night of the 4th of December, Mrs. B. felt a stitch immediately below the lower border of the false ribs on the left side posteriorly. I saw her early on the morning of the 5th. Her expression was decidedly anxious. She complained of a catching pain on inspiration in the left side, which, as compared to the right, was rather fixed. Auscultation could only detect the slightest suspicion of friction occasionally. There seemed to be a shade of dulness at the extreme base, and pain was complained of in the left shoulder. Pulse was 96; temperature, 99°; respirations, 22. Skin moist; tongue clean and moist at edges—dry in the centre. There was no history of any rigor, nor of exposure to cold. Lochial discharge natural. No abdominal tenderness. In the evening the respirations were 22; pulse, 120; temperature, 100°·4. Poultices were applied constantly to the left side.

6th.—Loud dry friction audible at left base, both anteriorly, posteriorly, and laterally. Milk in the breasts. Tongue and skin moist. Pulse, 120; temperature, 100°·4; respirations 30, in the morning. Pulse, 124; temperature, 100°·8; respirations 28, in the evening.

7th, Morning.—Perspiration copious; sudaminal eruption. Friction at left base less audible, but dulness much more pronounced. Still it does not reach as high as the lower angle of the left scapula.



Breathing somewhat bronchial, and vocal resonance increased. An occasional crepitation heard beyond the friction sound. No expectoration. Vocal fremitus not increased. Temperature,  $100^{\circ}2$ ; pulse, 120; respiration, 30.

Evening.—Had motion by means of enema. No cough nor vomiting, but a mouthful of bloody sputum was expectorated. Temperature,  $101^{\circ}8$ ; pulse, 124; respirations, 46.

8th, Morning.—Dulness up to level of lower angle of left scapula posteriorly. Friction loudly audible over dull area, and crepitation distinctly to be heard beyond the friction murmur. Breathing bronchial, vocal resonance increased over the area of dulness. On the right side an occasional crepitation heard in front. The patient was not turned round to examine the right back. The first sound of the heart at the base is distinctly muffled. No albumen. Temperature,  $103^{\circ}$ ; pulse, 132; respiration, 36. A large blister ordered to be applied over the left side. It rose well. The patient was at the same time ordered to take an alkaline diuretic, and to have mild, non-stimulating food, but no alcoholics.

Evening.—Feeling decidedly anxious about my patient, I asked Dr. Matthews Duncan to see her with me. We then found a slight degree of extra consciousness of pressure over the uterus, which, however, did not by any means amount to tenderness. Physical signs very much as in the morning, only that, on turning round the patient to the left side, an occasional crepitation, with bronchial breathing, and some increase of vocal resonance, was heard at the right base. No friction was audible on the right. The heat-rash was very general in extent, mottled, not unlike that of scarlet fever, chiefly confined to the trunk, and not affecting the vulva. Lochial discharge still normal. Dr. Duncan recommended, in addition to what had been done, a tablespoonful of castor-oil and a teaspoonful of turpentine. This gave rise to two copious stools during the night. Temperature,  $103^{\circ}4$ ; pulse, 132; respirations not counted.

9th, Morning.—Slept occasionally during the night. Looks easier. Enjoyed some toast and tea this morning. Chest symptoms not worse. Temperature,  $101^{\circ}6$ ; pulse, 132; respirations, 34.

Evening.—Dulness at left base not increasing. Some crepitation audible at right base, where there is also dulness and increased vocal resonance. Temperature,  $101^{\circ}6$ ; pulse, 120; respiration, 28.

10th.—Chest symptoms as yesterday, only crepitation at right base posteriorly more distinctly marked. Patient slept six hours. Cardiac systolic murmur more loudly heard at the base, and rather harsh and grating in character. At apex (mitral area) a boom is heard with the first sound, but no murmur. The second sound is clear. No increase of cardiac dulness. The cardiac murmur is suspiciously like friction. Bowels moved unassisted yesterday afternoon, and again to-day. Patient feels decidedly better. Is taking ten drops of turpentine thrice a day in water.

Morning.—Temperature,  $102^{\circ}8$ ; pulse, 125; respirations, 24.

Evening.—Temperature, 102°·4; pulse, 120; respirations, 24.

11th.—Had a very good night. Bowels slightly loose. Last night a mouthful of bloody sputum expectorated. The expectoration is usually tinged with blood, but is slight in amount, and there is scarcely any cough. Friction nearly quite gone from the left side. The dulness is also diminishing. Crepitation is still audible. Cardiac murmur persistent.

12th.—From this time the patient improved slowly, but uninterruptedly. The signs of pleurisy and pneumonia gradually disappeared from both lungs.

The cardiac murmur, which, from its character and situation, led me to more than suspect the existence of pericarditis, gradually lost its harsh character, and developed into a very soft systolic blowing murmur, which was propagated in the direction of the inner third of the right scapula, forcing on me the conviction that it had been all along, in great part at least, endocardial.

On the 29th December I have the following note :—Patient doing well, and is to get up to-day. The systolic murmur is most loudly audible in the second intercostal space close to the left edge of the sternum. It is soft but distinct, and *is audibly* propagated along the course of the aorta and great vessels. It is audible at the lower edge of the inner third of the right clavicle, but not under the middle third of the left clavicle. It has now entirely lost the creaking and grating character it formerly possessed.

The two cases above related are the only specimens of this kind of lesion that I have been called upon to deal with in the course of practice. They both presented symptoms at once serious and threatening. The first gave me a great amount of anxiety in case the illness would turn out unfortunately; and the second, I must also confess, caused me great, though, compared with the first, less uneasiness. As I already hinted, it was the conviction that the record of these cases, if published, might prove a solace to some member of our profession, who might be called upon to deal with his first case of the kind, that prompted me to read them before this Society. I cannot think that conditions such as we find in the patients before us, possessing as they do so many special points in common, do not occur now and again, though I have not been fortunate enough to fall upon them either in practice or in reading. Dr. M. Duncan, who was kind enough to see both cases with me, has stated to me that he has met with other two of late having a considerable resemblance to them. The one, however, was a case of pleurisy only, the other was one of empyema, complicated with perimetritis. The first case recovered. The second is still living, but in a very doubtful condition.

Let me now endeavour to trace the leading peculiarities of the cases.

We had nothing very special in respect to the labours. The

delivery in the first case was remarkably easy. In the second it could hardly be called severe. I merely terminated the case with forceps to save my patient what I considered quite an unnecessary amount of suffering. Her previous labour had been rather difficult and severe, and yet nothing untoward happened. I have drawn attention to the mechanism in her case merely as a point of interest to the exact obstetrician. My patients were in perfectly comfortable circumstances, possessing every necessary means to enable them to avoid exposure to cold or other injurious influences, both at the time of the delivery and afterwards; and the nurses were trustworthy, careful, and intelligent, so that nothing in the management of the patients contrary to the strictest rules of caution and propriety could have occurred. Besides this, both patients were in good health at the time of their confinement. There was the slight influence of fret, on account of the elder baby having a first and then a second tumble, which was dwelt upon by the attendants of the patient in the first case. But, then, we know that patients and their friends are very apt to place too much importance upon the influence of trivial incidents such as these on the causation of disease. And, besides, there was no such cause even thought of in the second of the two cases. It is therefore extremely difficult, if not impossible, to find any likely cause for the seizures. In both cases the pain came on at first slight, and gradually, though rapidly increased in severity. There was no sudden seizure, with fainting and dyspnœa, in either case. I examined with very special care, in regard to the first patient, whether any sudden disagreeable feeling had arisen, when, on the first occasion of alarm about her child, it appears she sat up in bed. But I could elicit nothing. She at that time did not feel faint, she did not feel pain in the side nor in the abdomen, and she was not in the slightest degree breathless. In fact, she noticed no bad effects from this premature effort of exertion.

I mention these particulars, because my mind was strongly inclined to predicate the possibility of pulmonary embolism, if the facts were such as could be squared into that idea. But I fail to find sufficient grounds for such a belief, although I have sought very carefully for them. As negating embolic disturbance, I ought to mention that there was no antecedent varicosity in the legs of either patient—there was no inconvenience in the lower limbs, other than a little of that passive œdema of the legs that one almost constantly sees towards the end of pregnancy, and there was no evidence of any metritic mischief in either of the cases. On the other hand, the onset and course of the chest symptoms were very unusual. The friction, in the first instance, was extremely ill-defined, and the rapidity with which the dulness increased was very remarkable. The dulness in both instances was very absolute, and did not appear to be due to the effusion of serum, but to an exudation of a more solid element. At any rate, change of position seemed to make very



slight alteration in its level. Pneumonia accompanied, if indeed it did not precede, the pleurisy in both cases, and yet even it did not exhibit the ordinary phenomena associated with this disease. The vocal resonance was slowly and imperfectly developed. There was little consonance of the breathing, and there never was fine crepitation heard. Indeed, for days no crepitation of any kind was audible, and then it was distant and specially large for pneumonia. But the most peculiar point in regard to both was the presence of sanguineous sputum. The cough was in neither case much, and the mucous expectoration was slight. But in both cases mouthfuls of bloody expectoration were frequently spat up without effort. In the second case this was slight in amount, but in the first case it was copious and long-continued, the prune-juice colour of the sputum forming a marked feature in the case, and the colour of the expectoration remaining darkish-red for months after the severity of the illness had passed off. There were thus very many points that could be explained on the assumption of embolic infarction of the lungs more readily than on any other consideration. For this would explain the bloody expectoration, the situation of the commencement of the lesion in both cases at the extreme base of the lungs, the sudden supervention of dulness without at first corresponding fever, and the defective amount, as well as the retardation of the appearance of the crepitation. The ultimate height attained in both cases by the temperature, about  $103^{\circ}$ , also would fall in with the embolic theory. But, on the other hand, the absence of dyspnoea, the gradual onset of the attacks, the want of evidence of any metritic mischief or of inflammation in the right side of the heart, and the favourable termination of the cases to my mind rather oppose that view, so far as my reading and observation of such cases carry me. At any rate, if the cases were due to embolism, the plugs must have been of a purely healthy character, and could scarcely have been the result of any pelvic phlebotic mischief, but must have simply been the product of coagulation in the uterine venous sinuses.

In both cases there was evidence of slight endocarditis, affecting in the first case the competence of the mitral valves, and in the second producing a certain degree of aortic obstruction. I am really at a loss to determine whether in Mrs. B.'s case there was not a certain amount of pericarditis superadded to the endocarditis, as the murmur was so creaking and harsh, and so strictly confined to the base. But, be that as it may, there was undoubtedly a certain degree of endocarditis affecting the semilunar valves, as evidenced by the permanent obstructive murmur at the aortic orifice.

From the observation of cases like these, as well as in consequence of certain researches on the bearing of heart disease upon pregnancy, with which I am at present engaged, and the results of which I hope to lay before the Society at an early date, I have been led to believe that the puerperal condition is apt to act very prejudicially on the



vascular system generally, and I have been brought to doubt whether it is really rare to have endocarditis set up in connexion with the lying-in period. I am very strongly inclined to suspect that, though luckily ulcerative puerperal endocarditis is a rare disease, a slight amount of endocarditis in the puerperal state may be common, and has not been often observed, because seldom looked for. At any rate, since I met with the above cases I have seen a third, certainly, and I think, although I am not so positive in regard to it, a fourth case, in which there existed slight and transient endocarditis, as evidenced by some cardiac irregularity and feeling of discomfort in the cardiac region, with a loud, or at least distinct, blowing systolic murmur at the base. I do not mean by that the soft mitral systolic of the lying-in period, so much talked of by German obstetricians, who, I am convinced, however, exaggerate its frequency of occurrence. My opportunities as yet have not been sufficiently great to warrant me in doing anything more than merely throwing out a suspicion regarding the frequency of slight non-pyæmic endocarditis in the puerperal condition.

That, however, the vascular system was generally in a condition prone to inflammatory change in Mrs. L.'s case is evidenced by the supervention of phlegmasia alba dolens, with its usual concomitant of corded and enlarged veins, and of tenderness along the course of the bloodvessels of the affected limb. That venous thrombi originating in a limb affected with phlegmasia alba dolens may occasion, in the first instance, pulmonary infarction, and lead then indirectly to pleurisy, pneumonia, and other results of an inflammatory nature in the lung, is abundantly insisted upon by Virchow, Trousseau,\* Gerhard† and a host of other observers, so that I need not refer to this point.

But the credit is due, so far as I have been able to make it out, to the elder and younger Begbie of having pointed out that phlegmasia alba dolens is not unfrequently either an antecedent or consequent of pleurisy, the swelled arm or leg appearing on the side on which the pleuritic lesion was situated.

Dr. Warburton Begbie‡ says, in speaking of four cases of acute pleurisy in which he performed the operation of thoracentesis :—"In one of those four, a young gentleman of twenty-four years of age, the pleural effusion was associated with a peculiar swelling of the corresponding limb, both in the leg and in the thigh. This swelling was not of an œdematous character, but firm, and resembling a good deal the condition of the extremity when affected by phlegmasia alba dolens;" but Dr. Begbie informs me—and the observation appears to be very interesting—that in three cases of pleurisy occurring to him within a limited period of time, he has observed the swollen limbs

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\* "Clinical Medicine," vol. v. p. 331.

† "The Hæmorrhagic Infarction, German Clinical Lectures," second series, p. 264.

‡ "Edin. Med. Journ.," vol. ix. p. 1095, June, 1866.

corresponding to the pleuritic side. In one of those, the lymphatic disturbance in the leg—for such it would appear to be—preceded the pleurisy; in the others was consequent on it.

I am further informed by Dr. Matthews Duncan, that he has distinct recollection of phlegmasia alba dolens following an attack of acute pleurisy in a young unmarried lady, a patient of his. He also knew of the same sequence of events occurring in a young gentleman, a relative of his own. But in this case the pleurisy itself arose in the course of convalescence from an attack of typhoid fever. As phlegmasia alba dolens is not an uncommon sequela of typhoid fever, of course the value of this example is somewhat less than if it had occurred independently of the latter affection.

It is, however, evident, that there is some occult connexion subsisting between pleurisy and phlegmasia alba dolens even under conditions that exclude the possibility of pyæmic processes, or any form of blood-poisoning.

That we had here such a case in Mrs. L. I think is undoubted, for I cannot believe that either case can be fairly considered as metritic. At the same time, I can hardly avoid believing—in fact, I ought rather to say, I am very strongly convinced—that the puerperal condition had a very special influence in modifying the course of the chest affections.

I can only, by reference to the peculiar condition of the blood that is special to pregnancy and the lying-in period, and perhaps also to the necessary dorsal decubitus associated with the latter, explain the peculiarities of the pleuritic and pneumonic processes in these cases, such as the rapidity with which the semi-solid dulness was developed, the absence of minute crepitation, the slowness with which the crepitation appeared, as well as the sanguineous sputa, except upon the idea of pulmonary embolism. To the latter view I am strongly inclined, could I see convincing proof of its being the correct one.

But be those theoretical notions what they may, it is abundantly evident that severe pleuropneumonia may arise from causes not necessarily resulting from puerperal fever within the childbed week; and though they perhaps will always give rise to serious concern, they are not necessarily of evil omen, if the other symptoms exclude childbed fever.

Of course the difficulty will always be to exclude the latter affection.

A single word as to the temperature. It is to be observed that it ran its course on somewhat lower lines than ordinary pneumonia would have done.

In the first case it ran up to  $103^{\circ}$  on the evening of the third day. From the fourth to the seventh it declined. It began to rise on the ninth, when the left lung became affected, and again showed signs of declining from the thirteenth to the fifteenth, when it rose with the occurrence of the phlegmasia. With the disappearance of the acute

symptoms in the left leg, it again oscillated upon the line of  $100^{\circ}$ , till the right leg in its turn became affected, when it rose to  $102^{\circ}3$  on the twenty-fourth day, after which it steadily and persistently declined.

In the second case it reached its acme on the evening of the fifth day, when it rose to  $103^{\circ}2$ . It then continued much about the same for four days, when it declined steadily, but very gradually.

As to treatment, I have really nothing to say. It was purely symptomatic. I think the blisters did good in both cases. I also think the chlorate of potash and the iron were of benefit in the first, and the turpentine in the second case. But one dare not dogmatise in such matters.

*Supplementary Note.*—On the whole, after carefully re-reading Gerhard's article upon pulmonary infarction, referred to in the body of the paper, I am disposed to believe that simple pulmonary embolic infarction is not so distinctly excluded as I was led to suppose at the time I read this paper before the Society. I find particularly that the local signs in my cases coincide very closely with the local signs as given by Gerhard at p. 272 *et seq.*, and especially so in so far as the local signs in my cases were *peculiar*. I am therefore led to believe, that the assumption of hæmorrhagic infarction arising from embolism and leading to pneumonia and pleurisy after all explains the case better than any other supposition, and is not absolutely negatived by any evidence in the case, as I had supposed. Still, there are several difficulties in the way of its acceptance, more especially from the absence of any urgent symptoms at the commencement of the illness, and the want of any positive evidence of metritis or of pelvic phlebitis. I cannot think that the phlegmasia in the first case was related to the chest affection in the relation of cause and effect, appearing as it did after the chest symptoms had almost entirely disappeared. Nor is there any evidence that both conditions were due to a common cause, as the most careful examination of the abdomen did not reveal any metritic or phlebitic mischief from whence both might have arisen.

At all events, the embolic plugs, if such existed, must not have been of a septic nature. It certainly takes a considerable amount of faith to believe that embolism may have arisen from the escape of a simple antiseptic coagulum from the placental area, or from the uterine sinuses in connexion with two such uncomplicated cases of labour happening so near one another; and yet this assumption seems to me after all to meet the requirements of the case better than any other supposition.

Professor SIMPSON thought the Society was indebted to Dr. Macdonald for this interesting communication. He had not met with a case parallel to either the one or the other of Dr. Macdonald's cases. He had met, however, with cases of pneumonia after delivery resulting from infarcti. He also remembered a patient recovering well

from bronchitis, in whom, after delivery, symptoms of pneumonia came on, proving rapidly fatal; also, the case of a patient in the seventh month of pregnancy, with a double cardiac murmur, who suffered from slight broncho-pneumonia. She was delivered at the eighth month; double pneumonia supervened in the third week after confinement and proved rapidly fatal. Dr. Macdonald's remarks regarding endocardial affection in these cases were interesting. He had no doubt that Dr. Macdonald was correct in attributing the symptoms in these cases to endocardial lesion. Hæmic murmurs were not, however, uncommon in the puerperal state, and should not be confounded with these.

Dr. RITCHIE had seen a case, some years ago, very like Dr. Macdonald's first case. She had repeated miscarriages, resulting, in his opinion, from gonorrhœa contracted shortly after marriage. Phlegmasia came on, followed by pneumonia of right lung, which proved fatal. He had also seen several cases of intense bronchitis coming on shortly after delivery.

Dr. THOMSON had lately a case of pneumonia coming on seven days after delivery. Prune-juice expectoration was a marked sign in this case. The patient recovered.

Dr. MACDONALD, in reply, stated that he was much interested in the case Dr. Thomson had mentioned. In regard to these cases, generally, he thought there was a certain individuality about them which would warrant us in regarding them as a special class of inflammations. There was apparently something peculiar in the inflammation occurring in certain cases of pneumonia of the lying-in period which distinguishes them from cases occurring at other times. He had watched, in his practice, cases of pneumonia in the lying-in period that ran their course as ordinary pneumonia apart from pregnancy. But what struck him in observing and thinking over the cases he had recorded to-night was the very many points of divergence between them and ordinary pneumonia, such as the rapidity with which the dulness was developed, its very absolute nature, the absence at first of crepitation, the largeness of it when it did form, and the bloody sputum. The most of them could be explained, however, on the embolic theory, if the other symptoms could be made to agree with it. His real difficulty was in finding an origin for the embolism and urgent symptoms to correspond with its period of occurrence. In all the labour cases he had attended for some time back, his attention had been directed to the state of the heart, and, in a certain proportion, he had found hæmic murmurs. In the cases detailed in this paper, the murmurs persisted after the patient had recovered, proving them not to be of this nature, but the result of organic lesion.



*Notes on a Case of Hemiplegia in a Child following the Application of the Forceps at Birth.*

By HENRY M. CHURCH, M.D.

E. W., a female child, aged one year and seven months, residing near Stirling, was brought by her mother as an out-patient to Ward 16, Royal Infirmary, June 17th, 1876. The complaint regarding the child was that she could not move the right arm and leg.

The mother stated that she had a difficult labour, that the child was born at the full time, and had the instruments applied by the doctor at its birth, and that for two hours after its birth hot cloths had to be put to the chest before breathing was properly established. The day after, the child had a "shaking fit," affecting only the right side, and on each of the two following days a similar shaking took place. The child was unable to take the breast, and was brought up on the bottle. Up to ten months of age her mother only thought she was left-handed. She then noticed that the right hand was generally closed, with the thumb drawn in, but that the fingers were extended during sleep, and if the child were about to fall. The right leg seemed bent at the knee, and could be swung about, but always yielded if the child were allowed to stand. She had always noticed that the right arm and leg were softer and colder than the left, the left alone being used when the child was at play. She, however, thought that the right side was more easily tickled while bathing her in the evenings. Nothing was ever noticed peculiar about the face.

When the child was brought to the ward she seemed a healthy, happy child, and was eating something out of her left hand. The right arm hung loose, the thumb drawn in, and the fingers flexed. She used it to a certain extent, but could not lift it to her mouth. Anything placed in this hand was firmly grasped and retained, evidently from the want of power to extend the fingers and so let it fall. On careful measurement of the forearms, the circumference of the right was an eighth of an inch less than the left. The limb felt cold and flabby. When placed on the ground, she stood supported by her mother, and seemed to use both legs equally well; the circumference of the right thigh, however, was less by half an inch than the left. When placed upon her back, she kicked both limbs about, and sensation in both seemed to be the same. They were both of the same length. The face seemed natural both in laughing and crying. Across the temples were two cicatricial markings, that on the right side being the most prominent, running upwards and forwards for about an inch and a half at an angle of  $45^{\circ}$  to a horizontal line drawn between the ear and the angle of the orbit. The transverse diameter of the forehead appeared unusually small and the temples compressed, affording a striking contrast to the large rounded posterior part of the head.

Education, rubbing, and galvanism were recommended as treat-

ment, and the mother asked to bring her back, which, however, she never did.

*Remarks.*—That the mother had a tedious labour, and that delivery was effected with difficulty, even with the aid of the forceps, cannot be doubted. Under such circumstances a prolonged state of imperfect circulation of the blood would ensue, and hence the asphyxiated condition of the infant, which, but for the persistent efforts to restore the respiration, would have perished.

The first point of interest in the case is the unilateral nature of the convulsion which followed the great venous congestion of the brain, the right side being that affected. Some left cerebral lesion had probably occurred to account for this phenomenon. Either an extravasation had taken place in the brain, or some mechanical injury had been inflicted on the brain-substance during the application of the forceps. It has been shown from post-mortem examinations that in stillborn children numerous punctiform ecchymoses occur in the brain and its membranes, and in the different serous membranes of the body. Moreover, in young animals whose brains have been subjected to pressure punctiform apoplexies have been produced. In the case under consideration, right hemiplegia, which was not of a temporary nature, followed the convulsive seizure. It is therefore probable that a small apoplexy had followed the intense congestion in the left side of the medulla oblongata. That this was the seat of lesion is rendered probable from the fact that the face remained unaffected, that the child had inability to suck, and that respiration was nearly abolished—the last two phenomena resulting from implication of the eighth and ninth cranial nerves.

Another view to be taken of the case is that the lesion resulted from direct injury to the skull at the seat of application of the forceps. The depth and length of the two cicatrices nineteen months after birth gave a clue as to the primary injury inflicted on the skull from the blades of the forceps. Both cicatrices were so situated as to pass across the speno-parietal and fronto-parietal sutures. Grant, then, that these sutures were seriously injured, that inflammation was set up in them, spreading to the membranes, or to the brain-substance itself, or that an extravasation of blood of considerable extent took place between the cranium and dura mater compressing the brain, there is perhaps in these hypotheses sufficient explanation of the convulsive movements and the subsequent paralysis opposite the seat of lesion. At the same time this inflammatory process in the sutures would occasion premature ossification of the cranial bones and narrowing of the temples. Hence the deformity in this case—namely, the unusually small diameter through the temples compared with that of the posterior part of the cranium. The child's intelligence at the time she came under my observation seemed to be of a fair average, but it would be interesting to watch whether any mental impairment will result from the growth of the brain within the altered cranium.

Dr. CRAIG commended the paper and remarked that, although considerable injury was often done by use of forceps during delivery, yet permanent damage rarely resulted.

Dr. MACDONALD had met with a case in which the operation of perforation had been commenced. A strong pain came on expelling the child. No bad result ensued.

Dr. BALLANTYNE believed that death in the foetus was often the result of the use of the forceps. He referred to a case of Dr. Sidey's, in which the head had been much indented after the use of the forceps, and the child died.

Professor SIMPSON mentioned a case which had been shown to the Society some years ago in which depression of the occiput had resulted from use of the perforator. The child recovered.

Dr. RITCHIE thought Dr. Church's first explanation of the rationale of the case probably the correct one, that some apoplectic condition and not merely pressure was the cause of the hemiplegia.

Dr. JAMES CARMICHAEL mentioned a case he had met with lately, and in which he had examined the head after the child's death. A great deal of capillary extravasation had taken place all over the cerebral hemispheres. In this case the labour had been quite natural, and the child was easily born without instrumental aid. He was at a loss to account for the extravasation of blood.

After a few remarks from Dr. Ronaldson, Dr. CHURCH briefly thanked the Society for the reception of his paper, and the discussion closed.

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## OBSTETRICAL SOCIETY OF DUBLIN.

*Meeting, Saturday, March 10th, 1877.*

THOMAS DARBY, F.R.C.S.I., *President, in the Chair.*

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### *Some Cases of Disease of the Uterus in Connexion with the use of Alcoholic Stimulants.*

By JOSEPH P. DOYLE, L.K. & Q.C.P.I.

MR. PRESIDENT AND GENTLEMEN,—I shall not occupy the time of this Society by giving an every-day report of my cases; my object in bringing them forward is to draw the attention of the members to the use of alcoholic stimulants by females of ample means suffering from diseases of the uterus.

The first three cases I shall bring under your notice had what many would call hysterical symptoms, and I may state that I was not sent for to attend them for the uterine affection, nor was I consulted with reference to it until some time after they had recovered from their acute attack.

CASE I.—Married, aged about twenty-eight years, has four children, last four months old, which is bottle fed. The mother is one of those affected females that are fond of admiration, good living, and

who are inclined to exaggerate their infirmities in order to receive commiseration.

For some years she has been subject to pain in back, extending down thighs, but since the birth of her last baby it has increased, and she has become weak and nervous, and is suffering from leucorrhœa, menorrhagia, and, within the last few days, from loss of appetite, sleep, and cough.

I was summoned to her suddenly, as she had fainted, but she had come to before my arrival. I found her in bed, the face flushed, the left side of it twitching; the pulse are small and weak, 88; heart's action regular, sounds rather clear; skin moist; extremities feel a little cold; temperature  $97^{\circ}$ ; tongue most flabby and coated; there is a disagreeable taste on mouth, with an inclination to vomit. The least noise makes her start, and she complains of forehead ache.

My usual salutation, for some days, on seeing my patient, was:—"I cannot eat, and feel very weak; can I take such-and-such wine or some brandy?"

On making a vaginal examination, the uterus was enlarged low down, tender on pressure, slightly retroverted and retroflexed; os patulous, with a tenacious plug of mucus adhering to it, on removal of which the part presented a raspberry-like appearance.

CASE II.—Aged thirty; never very strong; when a girl suffered from dysmenorrhœa, which was relieved by taking warm whisky and water; since her marriage she enjoyed very good health, and has three children, the last is three months old; while carrying it she had a tendency to abort on two occasions, but was delivered at full time of a healthy boy, whom she is not nursing.

Since her confinement she has been suffering from menorrhagia, and has found herself getting weak, although having a good appetite and taking some sherry.

Within the last week she found her strength failing her more, and does not sleep well. When seen by me she was lying on a sofa after vomiting, and the least movement tended to reproduce it; she was exclaiming, in a weak voice, "I am dying," and referred all her illness to the cardiac and epigastric regions; the face was pale; extremities cold; temperature  $98^{\circ}$ ; heart's action very weak, 92; pulse in wrists scarcely perceptible.

I was informed that in getting up in the morning, feeling weak, she took some sherry, which she repeated three or four times; but not finding it do her good she had recourse to brandy.

For some days it was very difficult to get her to diminish the quantity of alcohol, which consisted of better than half a bottle of brandy, three or four glasses of sherry, and a little champagne, which was ordered to be substituted on the withdrawal of the others.

She began her potations at five or six in the morning, in order to relieve a feeling of sinking in the epigastric region, and a noise in the ears, which lasted up to ten o'clock, and returned about six in the evening, when it did not last so long.



On each visit I had to examine the heart, in order to satisfy her that it was normal. The bowels were rather obstinate, and had to be relieved on two occasions by enemata of soap and water.

A vaginal examination revealed a granular condition of os and cervix.

CASE III.—Married, aged forty-two, has one child eight years old, has always been subject to delicate tonsils. Came under my care for slight hæmoptysis from apex of right lung, and is very nervous about it, as some of her family died from hæmorrhage. After three weeks' treatment, the lung affection being gone, she consulted me with reference to a weakness and severe pain in back, cramps, and a sensation of tightness and pins-and-needles in abdomen.

There is slight leucorrhœa and severe menorrhagia, and she dates back the beginning of those symptoms to sitting on damp grass two years since, whilst unwell.

The pain and weakness in back have increased so much lately that she is obliged to recline on the sofa the best part of the day; she is very despondent, and near six o'clock every evening the cramps occur in abdomen, and the only thing she finds relieve them is brandy; the appetite is good; she sleeps well; and the bowels are rather free; her face is full and flushed; there is a timid uncertain look about the eyes, the lids of which are continually winking, and she cannot keep her fingers or head quiet a minute; she sighs frequently, and the least noise, or the sudden appearance of any person in her presence, makes her start and put her hand to the cardiac region; the sounds of the heart are clear, and the action weak; pulse at wrists very small and compressible, 112; temperature, 97°.

On a vaginal examination the os and cervix were found to be granular.

CASE IV.—Aged fifty; was knocked out of bed to see her for supposed hæmorrhage; she was under the influence of alcohol; at the request of her friends I saw her the following day, when she apologised for disturbing me, as she was tipsy. She informed me that about two months ago she had a uterine tumour removed, in consequence of metrorrhagia, that produced great weakness, and obliged her to take stimulants in large quantities.

I have not seen or heard from her since.

CASE V.—Aged forty-six; married twice; has one child by last husband, seven years old. For some years is in the habit of imbibing freely; has been suffering from metrorrhagia, that was so severe on one occasion that I had to apply tr. fer. perchloridi to interior of uterus, and plug.

Under the administration of saline purgatives, the uterine congestion was relieved, and she died in a year afterwards of chronic alcoholism. The metrorrhagia depended on enlargement of the liver.

None of my cases had any important hysterical symptoms, such as

clavus or globus hystericus, convulsions, spinal tenderness, or articular derangement. The temperature, when taken in the axilla, was generally under 98° F., and in Cases I., II., III. the abdomen emitted a hollow sound on percussion.

In four of the cases I brought before you, stimulants were first taken to relieve weakness or nervous exhaustion, and which I have no doubt they did.

The late Dr. Gregory states that an occasional excess is, upon the whole, less injurious to the constitution than the practice of daily taking a moderate quantity of alcoholic liquor. The action of alcohol being transient (and, in such cases as I have narrated, increasing the uterine affection and depression), soon calls for a repetition, and gradual increase in the quantity, so that the system becomes imperceptibly tolerant of a large supply, and which ended by producing an attack of subacute gastritis in Cases I. and II., hæmoptysis in Case III., and intoxication in Case IV.

The great point in connexion with these cases that I observed, was the gradual diminution in the quantity and final disuse of stimulants, which seemed to keep pace with the improvement in the uterine disease.

It is now some months since the three first cases were under my observation, and when seen by me a short time since, they were quite well, and I understand only take a glass of sherry occasionally.

The great factor in the treatment of such cases is rest, and those organs functionally deranged generally require it first, but the uterine malady should be treated as soon as possible, for, as long as it exists, nervous irritation and exhaustion are kept up, and the circulatory system is drained by the menorrhagia and leucorrhœa. I need not say that you must impress on your patient the necessity of giving up stimulants.

The local application I found of most service, after any congestion was relieved by a scarification, is the glycerine of tannic acid.

Before concluding my paper, I may state that I do not disapprove of the use of alcoholic beverages when taken in moderation or applied medicinally. At the same time, I avoid prescribing them as much as possible, and, when needed, I order half-drachm doses of spt. vin., combined with tr. of digitalis or spt. ammoniæ aromat.

Dr. DENHAM thought that the tendency to take stimulants in such cases was not due to medical recommendations, but that the palpitations and such symptoms were often put on for the purpose of inducing the medical attendant to recommend or permit a certain amount of stimulant. The associated bodily and nervous depression induced a craving for them, but he thought them neither necessary nor advantageous.

Dr. MACSWINEY had met with a large number of cases in which patients with uterine maladies were inclined to take too much alcohol. He was disposed, however, to think the concurrence of the organic affection and the alcoholic tendency only an accidental coincidence.

He did not think medical men were open to the charge of prescribing alcohol unduly. Women especially were prone to say falsely that stimulants were first prescribed for them by the physician. In uterine affections he thought that the greatest abstinence from alcohol and condiments was beneficial.

Dr. HENRY KENNEDY said that many exactly similar cases occurred in which the uterus was unaffected, and he did not think that its condition made any difference. Stimulants were often of the greatest use, but patients often took more than was recommended, and then the physician was not to be blamed.

The PRESIDENT thought that the main question to be discussed was whether alcoholism were an effect of uterine disease or only a coincidence.

Dr. M'CLINTOCK thought that uterine disease was more frequently the cause than the effect of intemperate habits. In a large majority of cases of endometritis and leucorrhœa there was a *cachexia uterina*, which much languor and debility, which tempted to the use of stimulants. But alcoholism might also induce uterine disease, especially metrorrhagia and menorrhagia.

Dr. KIDD had seen with Dr. Doyle a case of uterine congestion with alcoholism, in which he thought that the uterine condition was secondary to the intemperance. The opposite sequence was also common, for a popular and most effectual remedy for dysmenorrhœa was, in England, gin; or, in Ireland, whisky or brandy-punch. The *cachexia* of endometritis also led to a craving for stimulant. We should therefore cure the disease in order to do away with this desire.

Dr. JOHNSTON said that uterine ulceration was almost invariably attended with dyspepsia, which led to stimulants being taken.

Dr. DOYLE, in reply, said that, in the cases he had brought forward, the uterine disease was the cause of the intemperance. When he had cured this, the tendency to take alcohol disappeared.

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#### *Note of a Case of Diphtheria.*

By R. J. KINKEAD, M.D., Professor of Obstetric Medicine, Queen's College, Galway.

A. G., female, aged about seven years, had been ill for some days before I visited her. When I first saw her, she presented the following symptoms:—

Respiration slightly hurried; larynx evidently obstructed; a hoarse sawing sound was produced by both inspiration and expiration; voice low and hoarse; cough, croupy, barky, and metallic; temperature  $101^{\circ}$ ; pulse 130; tongue white; bowels loose; urine scanty and high-coloured; face flushed, but no appearance of diminished aëration of the blood; throat red, but no appearance of false membrane; no glandular enlargement on outside. Date of visit, 8 P.M. on 23rd

January. Diagnosis, croup. I saw her twice a day on the 24th, 25th, and 26th, when the symptoms had so much improved that I only visited her once a day afterwards. The temperature fell to the normal; the bowels became regular; the pulse fell to 90; the stridulous breathing disappeared, and became even, noiseless, and about the normal rate; the tongue cleaned. Improvement continued till the 30th, when the tongue got a little dirty.

On the 1st February the throat was covered with a false membrane. Marked asthenia had set in; the child was listless and heavy; breathing perfectly easy; pulse 130, very feeble; temperature below normal standard. During the night of 1st February convulsions occurred, and she died at 11.30 on the 2nd.

On the 30th, difficulty of swallowing manifested itself, the food (liquid) regurgitating through the nose. A day or two before this the food irritated the larynx, causing coughing. There was no appearance of false membrane till the 30th. I was, unfortunately, prevented from visiting her on the 31st, and the great change which had come over her between my visit on the night of the 30th, and the 1st of February, was most startling. The appearance of false membrane, on the 30th, was very slight; so much so that, in the very imperfect light, I was not able to decide whether it was the beginning of a pellicle or mucus from the posterior nares. The improvement of the patient from my visit on the 29th was, however, so marked, that I attributed it to the latter cause. She appeared in every way better, and there had been a decided improvement in appetite. The treatment was, in the first stage, when there was every symptom of croup, half-grain doses of calomel with vin. ipecac, and syr. scillæ—the latter to be given whenever the breathing became much obstructed; this produced marked benefit, and so steady was the amendment that only four doses of the mixture were given; and, as the child improved, the intervals of the calomel were increased from every hour on the first night, to every third, fourth, and finally ceased on the 27th. On the 26th, she was put on chlorate of potash and bark; and, on the 1st February, carbonate of ammonia was added.

On the 24th, a blister was applied to the trachea over larynx, and linseed poultices, changed every third hour, were kept to the throat all through; the blistered surface had perfectly healed on the 28th. Diet, at first, milk, *ad libitum*. On the 25th, beef-tea was added. On the 27th, port wine two ounces, with yolk of egg. Another ounce was added on the 30th, and it was ordered to be given freely on the 1st February. The throat was painted with liquor ferri pernit.

The question appears to be—were the croup and diphtheria distinct affections, or was it one and the same disease which attacked first the larynx and then spread to the pharynx.

The diphtheritic membrane did not spread upwards from the trachea, but appeared to commence on the upper border of the pharynx. The marked improvement of the patient, and the apparent



recovery from the croup, no symptom of laryngeal disease save aphonia remaining, seem to indicate that the diphtheria was a second independent disease.

I have not been able to trace any contagious element. There is no water-closet, nor any communication with the sewers from the house. The slops, I was assured, were emptied at a distance from the house.

On the other hand, there was one case of diphtheria in the same neighbourhood, which developed itself in a gentleman, the very day he arrived in Dublin from Tuam, where he had been staying. Also scarlatina has been prevalent in the town and country. And in two cases I attended, the stage of convalescence was complicated by croup. It is curious that in both these cases, there was, apparently, contagion—the elder boy, aged about three and a half, had scarlatina rash out when I first saw him, and his brother was then in the room; about six days afterwards, the sick boy being isolated, the brother got a very mild attack, and was then put into the same room. When the first boy had nearly passed through the desquamative process, he got an exceedingly bad attack of croup; and as he got well, his brother got a mild attack. In neither could I detect the least trace of false membrane in the pharynx.

The weather has been exceedingly trying; a vast amount of wet, with cold, stormy wind; whilst the country about is tremendously flooded.

Dr. HENRY KENNEDY did not think that the case told one way or the other as to the identity of croup and diphtheria. The throat was described as red, which was not the case in croup. He regarded the case as wholly one of diphtheria.

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## Obstetric Summary.

### *Gastrotomy for Extra-uterine Fœtation Successfully Performed.*

In a paper read before the New York Obstetrical Society Professor Thomas records a case in which he performed secondary gastrotomy for extra-uterine fœtation of the abdominal form, with a successful result. The patient seven months previously had noticed an abdominal enlargement, accompanied by nausea and other symptoms of pregnancy, which she supposed to be her condition. No pains, however, came on at the normal period, and all signs of pregnancy, except the enlarged abdomen, ceased. Professor Thomas took the case to be one of ovarian cyst, notwithstanding that the cervix uteri resembled that of a uterus in the third month of pregnancy. The uterus appeared to be of a size corresponding to the third month. The pelvic roof was hard and firm, as in pelvic peritonitis. The woman and her husband both asserted that they had distinctly and

frequently seen, and the former, that she had felt, the movements of the foetus, and persisted in this assertion, notwithstanding Professor Thomas's opinion that there was no pregnancy. The abdomen was tapped by the aspirator, and two gallons of fluid removed. This fluid was examined under the microscope, and declared to be ovarian, but since a body resembling a foetus could now be quite plainly mapped out, the diagnosis of abdominal pregnancy was made.

In the performance of gastrotomy, when the incision passed the peritoneum, that membrane was found to be very much thickened, and to resemble the ordinary sac of an ovarian tumour, and could be so easily stripped from the muscular layer as to render the mistake of peeling it off, in the belief that it was the adherent ovarian sac, exceedingly easy. On opening the peritoneal cavity, a fluid resembling pea-soup and flax-seed tea mixed, and containing large masses of flocculent fibrin, was poured forth. The examining hand readily discovered a large child in the abdominal cavity, and removed it by traction on the breech. It weighed six pounds fifteen ounces, and was a female. The umbilical cord ran to the left iliac fossa, where it was apparently inserted into the peritoneum, no placenta being discernible. The child was dead, and its death was evidently caused by a sharp constriction of the umbilical cord at about its middle by a long hair bound round it again and again. The peritoneal end of the cord was easily peeled off by the finger, without hæmorrhage. A drainage-tube was introduced, and the wound closed except a small portion. She did well at first, the pulse and temperature being reduced nearly to normal, while before the operation, the pulse was 120, and the temperature always 100° or higher. On the fourteenth day she began to show signs of septicæmia. A glass tube was then introduced into the small abdominal opening which had been left, and from which pus had been oozing constantly, and the peritoneal cavity thoroughly washed out, whereupon all symptoms disappeared. At the middle of the fourth week, when the patient had been already discharged from treatment, the temperature suddenly rose to 103°—104°, the pulse to 130. The finger passed into the abdominal wound felt a foreign body, which on its removal with dressing forceps, proved to be the placenta. It had a shrivelled, sunken appearance, and was of the ordinary size. The temperature went down within three hours, and the patient recovered.—*American Journal of Obstetrics*, October, 1876.

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#### *The Relation of Erysipelas to Puerperal Fever.*

Dr. Lühe, of Plön, relates a series of cases of puerperal fever, originating from erysipelas, which are of significance as regards the mode of conveyance of the poison and the efficacy of disinfectants.

The place had been free from any contagious puerperal disease for some years. A lady then suffered at the time of her delivery from slight erysipelas of the face. Three days later one of her attendants had a severe, but simple, attack of the same complaint, accompanied by much œdema, and the formation of large blisters. On the fifth day after delivery the lady herself was attacked by symptoms of puerperal peritonitis which proved rapidly fatal. Shortly afterwards two other puerperal women, attended by the same midwife, were attacked by a similarly rapid and fatal form of peritonitis. The midwife, an intelligent person, was instructed to make a thorough disinfection of her person, clothing, and instruments, and, although she did not give up practice, no further cases of puerperal fever occurred. —*Archiv für Gynäkologie*, B. xi. H. 1.

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### Gynæcic Summary.

#### *Malignant Tumours of both Ovaries Successfully Removed.*

A case is recorded in which Mr. William M. Coates successfully removed tumours, the structure of which was columnar epithelioma (?), from both ovaries. The patient was forty-three years old, and had had three children. For twelve months her health had been failing, and four months previously her abdomen began to swell, and increased in size till it became larger than that of a woman at the full period of pregnancy. There was no swelling of the lower extremities. The shape of the swelling was very like that of ascites. There was evident superficial fluctuation over the lower two-thirds of the abdomen, and in both flanks. There was dulness in front, from an inch below the umbilicus to the pubes, and in the left flank. Above the umbilicus there was exaggerated resonance. The umbilicus was prominent. On examination by vagina and rectum, the uterus was anteverted, and a firm solid mass was found between the rectum and uterus, the latter organ being abnormally immovable.

Other treatment not having led to any improvement, the abdomen was tapped, and two gallons of amber-coloured limpid fluid drawn off. The abdomen was examined immediately, and the liver was found of normal size and consistence. A little below and to the left side of the umbilicus a solid mass, slightly movable, apparently about the size of two fists, was discovered. A month later it was resolved to make an exploratory incision. When the peritoneum was opened, a large quantity of ascitic fluid drained away. With the hand passed into the pelvic cavity, two tumours, each larger than a fist, were found in contact with the bladder and the fundus of the uterus. The consistence of the tumours varied, some portions being very soft, while others were as firm as a healthy pancreas.

The tumours were composed of many portions, some being firmly

united to each other, others being so soft that one, the size of a walnut, came away when gently handled. Each tumour had loose attachments, which could easily be broken down, to parts around, but the right was firmly attached to the omentum. Both were also attached to the fundus of the uterus by a narrow pedicle. The omentum was clamped about two inches above the adhesion to the right ovary with an instrument devised by Mr. Coates for clamping hæmorrhoids. The slight adhesions to the sides of the pelvis were broken down by the hand. The pedicles, which were narrow and of fair length, were secured by Mr. Spencer Wells's clamps. They were then cut through, and crystallised perchloride of iron applied; but when the clamps were brought outside the wound, such profuse hæmorrhage occurred that the pedicles were at once tied in two parts with carbolised catgut, cleansed, and dropped into the cavity of the pelvis. The omentum, previously clamped, was cut through, tied with Chinese silk, and returned into the abdomen.

Vomiting came on nine hours after the operation, and lasted forty-eight hours. During this period she was fed by the rectum, taking in this way two ounces of beef-tea, half an ounce of brandy, and a grain of powdered opium, every two hours, the latter ingredient being withheld if she slept and had no abdominal pain. There was considerable tympanites for a few days, which was relieved, when excessive, by the use of a rectal tube. By the fourteenth day after the operation all pain and tympanites had disappeared, and convalescence from that time was uninterrupted. Three days after, on examining per vaginam, a soft mass was found between the uterus and rectum. This Mr. Coates believed to be a traumatic hæmatocele, in the pouch of peritoneum between the rectum and uterus, caused by some slight oozing of blood after the operation. Eleven days later it had completely disappeared.

Immediately after the operation, performed August 5th, 1876, a sanguineous discharge oozed from the vagina, continued for a fortnight, and then ceased. Her last menstruation occurred on the 6th of August, and lasted till the 11th. Menstruation did not again recur.

The following is the report on the microscopical appearance of the tumours by Mr. A. P. Gould, Surgical Registrar of University College Hospital:—"The growth consists of a soft fibrous tissue, raised into papillæ on the surface, many of the papillæ being compound. These papillæ are also covered with a thin layer of columnar epithelium. The stroma is very vascular; in one field of the microscope many large vessels are seen cut across, having very thin walls. The papillæ show a tendency to adhere by the apices, and so enclose spaces which become cysts lined with columnar epithelium."—*Lancet*.



*A Pessary for Simple Incontinence of Urine.*

In the *Archiv für Gynäkologie*, B. xi. H. 1, Professor Schatz describes a pessary by means of which he has succeeded in curing simple incontinence of urine depending upon loss of power of the sphincter vesicæ. He has met with many cases in which after delivery, operative proceedings, or long-continued tension produced by prolapse, such a condition has arisen, and has resisted all attempts at cure by operation, in some cases even when performed by Simon himself. He gives to his pessary the name of a funnel-pessary. It is bulbous above, and ends in a straight stem. The bulbous part is from 40 to 55 mm. in diameter; the stem is 3 cm. long, 2 cm. in diameter. The whole pessary is 5 cm. long, and perforated by a straight canal 1 cm. in diameter. It is made in vulcanite, and is sold by Marx, Heine & Co., of Leipsig, at the price of three marks.

The author describes its action as being so far similar to that of a conical valve that it becomes more efficacious in proportion as the pressure from above is increased, and so prevents the involuntary escape of urine in coughing, lifting, or straining. If not too large it does not interfere with voluntary micturition, and the patients are able easily to withdraw it themselves by a string attached through a hole at its lower extremity, and to reintroduce it. If the levator ani is very deficient, the action of the pessary fails, and hence, if the perineum has been extensively ruptured, it is necessary to restore it by operation before applying the instrument. The author explains that it acts by pressing upon and flattening the urethra, giving gentle support only at ordinary times, but firmer pressure during any strain or expulsive effort.

He relates four cases in which it was immediately and completely successful, two of senile debility of the sphincter, and two in which incontinence had lasted many years, and had resisted all efforts to cure it. He has found it useful in another case, in which there was no incontinence, but severe vesical tenesmus, especially at menstrual periods, associated with relaxation of the anterior vaginal wall. He believes that this symptom depends in such cases upon congestion of the base of the bladder, and that the pessary does good by emptying the vessels through pressure.

He thinks that it would also be useful in some cases of vesico-vaginal fistula, in which cure by operation is impossible, acting in that case literally as a conical valve, the central canal being stopped. He anticipates, however, still greater benefit from it when in such cases incontinence persists, after cure of the fistula, from partial destruction of the sphincter or urethra.

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*A Married Hermaphrodite.*

Professor Dohrn relates a case in which a hermaphrodite who appeared to be in reality of an imperfect male type, had been married as a woman. The individual came under his observation when twenty-eight years old. She had been baptised and brought up as a girl. She was healthy in childhood, but later suffered from chlorosis. At the commencement of her twentieth year she began to suffer from pain in the abdomen, recurring every four weeks. Her mother, fearing that there was some obstruction to menstruation, sought medical advice. She was told that there was nothing to prevent menstruation, but that, if she should afterwards marry, dilatation by incision might prove to be necessary. After this the expected menstruation never appeared, and the periodical pains gradually ceased. When she became betrothed another medical examination was made. The opinion given was that she was capable of cohabitation, but would be unable to bear children.

The marriage took place, and, a few days after, the husband brought his wife again for examination, finding that coitus could not be completed. She was then sent to Professor Dohrn, who found her general appearance to be that of a woman, but one of considerable muscular development; hair long; no beard or moustache; but the breasts flat, like those of a man. The external genitals were to outward appearance distinctly female, having both labia majora and labia minora, divided by a genital fissure. The apparent clitoris, however, was 4 cm. long, and slightly erectile. Below it was a groove, extending downward to the orifice of the urethra, which appeared to indicate the attempted formation of a male urethra. In the genital fissure, below the meatus, was a second opening, which appeared to have been taken on previous examinations for the orifice of a dense hymen. It led into a cul-de-sac two cm. deep, and the author regards it as being the lower end of Müller's duct, or the prostatic vesicle. Of the prostate there was no trace. At the upper part of the labia were two bodies as large as beans, apparently atrophied testicles, each with a considerable epididymis, and attached to a small cord, like the spermatic cord. Of vagina, uterus, or ovaries no further trace could be found. Nothing was ascertained as to production of spermatozoa or direction of sexual inclinations.

As to the question whether ovaries could possibly have been present as well as testicles, the author does not think the occurrence of monthly pains, as in this case, or an occasional flow of blood from the genitals, as in one recorded by Hohmann, to be sufficient evidence of their existence. He disbelieves in the existence of true bilateral hermaphrodites, and refers to a paper by Ahlsfeld (*Arch. f. Gyn.*, B. ix. H. 2), as overthrowing an often quoted case, recorded by Heppner, in which, in a child two months old, the female organs, of the internal genitals, were said to be best developed, but the prostate and both testicles to be also present.—*Archiv für Gynäkologie*, B. xi. H. 1.

## Pædiatric Summary.

### *The Communication of Syphilis from a Mother to her Fœtus.*

In a clinical lecture delivered at the London Hospital, Mr. Hutchinson records some cases bearing on a question which hitherto there has been little positive evidence to decide—namely, the form which syphilis takes in an infant when it has not been precisely inherited, but acquired during intra-uterine life by blood-transmission from the mother. The first case was one in which the mother contracted an indurated chancre about six weeks before delivery. At delivery no eruption had appeared, but, soon after it, she suffered from secondary syphilis in a severe form, having a most copious eruption, which showed a tendency to ulcerate. Thus probably during the last week of the child's intra-uterine residence the blood of the mother contained the virus in its most active stage, the exanthem being just about to appear. The infant suffered from severe symptoms at about the same time as the mother. There was nothing in the case, except perhaps the copiousness and pustular character of the eruption in the child, in the least different from what is seen in the hereditary disease. So severe, however, was the affection that, in spite of careful treatment, it withered away and died before the period had been reached at which the inherited form begins to differ from the other.

The second case was one in which the mother contracted the disease from her husband about five weeks before her confinement. About two months after delivery the infant had a rash, and the mother still had remains of the primary sore. The mother suffered decidedly, but not very severely, but the father was under treatment for more than a year. Mercury caused diarrhœa in the child, and but little was given. It pulled through, however, and lived to display, at the age of five, characteristic interstitial keratitis; it had also syphilitic arthritis, with effusion into both knee-joints, and some persistent thickening of the tibiæ. These have all passed off, and at the age of ten the child is in fair health, but bearing the unmistakable evidence of his taint. In this instance, then, the disease in the child, though acquired only just before birth, closely resembled in all respects the hereditary form.

In the third case the mother came under notice five weeks after delivery on account of a chancre on her tongue. She had first noticed the sore six weeks before her application, and she was covered with a papular eruption, which had been out three weeks. The infant was healthy at this time, and remained quite free from symptoms until nearly eight weeks old, when a well-marked syphilitic rash came out. It was treated as usual, and recovered. In this instance the mother's blood probably did not become infective till just before her confinement, at the date of her noticing the sore on her tongue.

In a fourth case, a woman who had previously borne two healthy children contracted syphilis from her husband during her third pregnancy, but at what exact date was not ascertained. The child, a girl, came under treatment at the age of twelve with troublesome keratitis. She had characteristic teeth, and there was a history of prolonged symptoms during infancy.

Mr. Hutchinson concludes that it appears probable from these facts that syphilis received by a child in utero is the same disease as that obtained by true inheritance, and that it does not assume the very mild form generally shown by syphilis transmitted from the foetus to the mother through blood communication; but is sometimes of a very severe type.—*Medical Times and Gazette*.

### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

"Cyclopædia of the Practice of Medicine." Dr. H. von Ziemssen. Vol. XV., Diseases of the Kidney. Sampson Low and Co. Pp. 796.

"On a Form of Non-malignant Induration of the Cervix Uteri." By Heywood Smith, M.A., M.D. OXFORD.

"Calculi found in the Bladder after the Cure of Vesico-Vaginal Fistula." By Henry F. Campbell, M.D., Augusta, Georgia.

"Pneumatic Self-Replacement of the Gravid and Non-Gravid Uterus." By Henry F. Campbell, M.D.

"Analysis of Seven Hundred and Seventy-four Cases of Skin Disease." By L. Duncan Bulkley, A.M., M.D. New York, Appleton, 1877.

"Appunti Intorno ad un Viaggio Obstetrico in Francia ed Inghilterra." Del Cavaliere Macari Francesco. Modena, Vincenzi, 1877.

"On the Physiology of Sugar in Relation to the Blood." By F. W. Pavy, M.D., F.R.S.

Communications received from Dr. Angus Macdonald, Dr. Nathan Bozeman, Dr. Otis Hyatt, Dr. Wigglesworth, Dr. Aikman, and Dr. Herman.

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## Original Communications.

### ON THE BEARINGS OF CHRONIC DISEASE OF THE HEART UPON PREGNANCY AND PARTURITION.

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(Read before the Obstetrical Society of Edinburgh.)

(Continued from p. 368.)

CASE XX.—*Mitral Insufficiency, with slight Stenosis and slightly-contracted Pelvis, observed by Professor Olshausen and Dr. Fritsch through three Pregnancies.—Ill from Childhood.—Special Distress from Pregnancy appeared about the sixth month.—First Labour finished by Forceps on account of pelvic narrowing.—During lying-in period repeated attacks of Dyspnœa—Pulse extremely irregular, without apparent cause.—Similar history in second Pregnancy.—Delivery by Turning.—During third Pregnancy all bad symptoms aggravated, reaching a climax during Labour.—Delivery by Turning.—Death ten days afterwards.—Great Cardiac Hypertrophy.—Mitral Valves slightly contracted, but extremely incompetent.—Right Auricle and the Venæ Cavae considerably dilated.—Lungs healthy.*

(Abridged translation from Fritsch, *Archiv für Gynäkologie*,  
Bd. x. s. 274.)

This patient was watched by Professor Olshausen and Dr. Fritsch through three confinements.

She came into hospital at the age of twenty-one,  
No. LV.—VOL. V. G G

during the eighth month of her first pregnancy, on 26th September, 1871. She had suffered from palpitation and expectoration of blood ever since her childhood; still, she had been able to do hard work as a servant. She experienced no special distress till the sixth month of her pregnancy, when on walking quickly or exerting herself, or bending down, she was apt to suffer from giddiness, pulsating feelings in her head, *muscæ volitantes*, *tinnitus aurium*, and very distressing palpitations. Still, on admission she looked in tolerably good health.

Examination of her condition then gave the following results:—Patient well nourished, nowhere any trace of œdema, slight cyanosis of the lips and eyelids, paleness of the mucous membranes. Cardiac dulness begins at the third rib, extends only quite slightly to right beyond the left edge of the sternum, and is altogether 4—4½ inches in breadth. Heart's impulse not strikingly powerful, to be felt in the sixth intercostal space, somewhat outside the line of the nipple. At the apex of the heart the first sound is changed into a double weak murmur, the second sound is very weak, the second pulmonary sound is markedly intensified. The radial pulse, 92; many beats, small, and almost absent. The pulse is generally small, soft, and irregular.

Labour came on on the 17th October. It had been preceded by *dolores præagientes* for several days. A moderate degree of narrowing in the antero-posterior diameter of the pelvis was diagnosed, and a bad prognosis formed. After rupture of the membranes the head was found to present the brow at the brim for a considerable time. After the head got pressed down into the pelvis under the influence of good pains, the down-bearing pains began, and during these the patient was neither cyanotic nor did she suffer from dyspnœa. Delivery was completed by forceps. Throughout the whole labour the cardiac lesion had produced no symptom, and the *first* days of the lying-in period passed in a completely normal manner, except that the patient complained of attacks of distress and palpitation that came on suddenly, without any cause. During these seizures the pulse was found extremely irregular, and 160 per minute. The last

attack occurred on the tenth day after the confinement. The patient was then discharged.

On the 14th of June, 1873, the patient presented herself at the Maternity for a second time to be confined. Again during the latter months the symptoms had become worse, the palpitation especially having been so distressing since the eighth month that the patient had often been awakened by it during the night. The most troublesome subjective symptom was the shortness of breath, which had scarcely existed in the previous pregnancy.

Pains began on the 9th of July. The head presented with a loop of the cord pulsating in front of it. Professor Olshausen turned before the waters were ruptured, and delivered quickly and safely, the child being born alive. Some considerable bleeding followed, which was quickly put a stop to. The patient recovered well.

In March, 1875, she sent for the aid of Dr. Fritsch, and asked him to attend her at her home during her approaching confinement. She then presented slight œdema of the eyelids and ankles, which, however, was not constant, but came and went. There was no albumen. Her condition was only endurable with complete quietness, and even then she occasionally had attacks of palpitation and shortness of breath, which would wake her in a fright during sleep. Morphia, digitalis, and purgatives afforded her some relief.

Cardiac dulness begins at the second rib, and extends to the lower border of the sixth, towards the left considerably beyond the nipple-line, and to the right, a little beyond the right edge of the sternum. Præcordial thrill perceptible from the fourth rib downwards. Heart's impulse to be seen and felt over a wide area. Both sounds at apex and base changed into a murmur of a rasping character. Second aortic and pulmonary sounds accentuated. Pulse 92, intermittent, many beats strikingly painful. On the slightest exertion, the heart makes the thorax vibrate.

On the 9th of April pains began, and advanced tolerably rapidly; the whole conditions got markedly worse at this period. The pulse became intermittent and irregular. The patient was at times unconscious, and presented very much the

appearance of one partially under the influence of chloroform. The child was turned, as the patient's condition seemed in the highest degree critical, and as turning had previously given good results. Immediately before the operation some strong pains came on, during which the respiration was extremely quick, the pulse could not be counted, the heart hammered against the thorax, and the patient, after uttering a loud scream, became unconscious. The turning was easy, and was followed by a sudden improvement in the most alarming symptoms. After the free use of wine, the pulse and respiration became quieter. The heart still beat violently, the pupils were dilated, the expression of the patient's face indicated consciousness, but she could not speak. She improved somewhat, but never made any steady advance, and died on the 19th of April.

Sectio twenty-four hours after death. Nowhere any trace of œdema. On opening thorax, both lungs are found retracted. The pericardium lies widely exposed. There is in it only a small quantity of pericardial fluid. The heart itself is increased at least to double its size, is horizontally placed, almost circular, and without an apex. Greatest length of the heart, six inches; the left ventricular cone measures somewhat over four inches. The heart contains fluid and coagulated blood, is not specially flabby, but rather hard and firm. The cardiac muscle is healthy (even on microscopic examination). The aortic valves are shut, and free from every pathological alteration. The mitral is slightly contracted, but extremely insufficient. The chordæ tendineæ are greatly shortened; the special valvular cusps are non-existent; on the edges of the valves are flattish thickenings, along with nodules. Greatest thickness of the left ventricular wall, 1·3 cent. Right chamber enlarged in a somewhat less degree than the left—its wall, 0·7 cent.; the right auricle and the venæ cavæ considerably dilated. The lungs are anæmic, and free from every pathological change.

I have abstracted this case at considerable length, though by no means in full, on account of its great value as a record of interesting facts. It contrasts, in my opinion, very favourably with cases of severe stenosis. Had we had as pronounced



stenosis as we had insufficiency in this case, I am confident that the patient would not have been got so safely over her two first confinements, the former of which was by no means easy. It is positively astonishing to find so little pulmonary disturbance, and especially to find œdema and hæmorrhagic infarctions absent. These would all have been decidedly present if the stenosis had been to such a degree as to tell upon the lesser circulation. It is interesting to notice how this patient, whose heart was even to the last well nourished, its muscular tissue being healthy, got on tolerably well till the second half of her pregnancy was more or less advanced. Then the usual train of distressing symptoms began to develop themselves in the form of attacks of dyspnœa, palpitation, and cardiac irregularity. However, during the first two pregnancies the compensation was good, and the deliveries, though the first especially was difficult, were got over with surprisingly little disturbance on the part of the circulation, and were followed by a disappearance of the distressing symptoms.

Still, the fell disease was advancing, as is seen when the great amount of cardiac dulness found by Fritsch in March, 1875, is compared with that given by Olshausen in September, 1871; and the heart was consequently not able to recover from the condition of perturbation into which it was thrown by the third confinement.

It is curious to notice the frequency with which Fritsch found the patients unconscious coincidently with the existence of alarming symptoms during delivery. I have already expressed the view that this is most probably the result of imperfectly aërated blood being sent to the brain in consequence of the imperfect circulation in the lungs, the latter arising out of the defective cardiac action during the delivery.

The extremely distressing symptoms affecting respiration are the more curious, seeing that on post-mortem section the lungs were found so clearly sound, being stated to have been free from every pathological change. It would appear that the disturbance of circulation within the lungs had never been of a very permanent character, and that the vessels of these organs had had sufficient time between the attacks of con-

gestion to recover their normal contractility. Still, as we find in the history that the patient had suffered from palpitation and *expectoration of blood* ever since her childhood, it is extremely difficult to believe that the lungs were free from all pathological changes. I fear there must have been evidences of old infarctions found, provided the lungs had been subjected to a searching examination. Still these must have been of slight amount, or else they would have arrested attention to themselves at the post-mortem examination. Some influence in the direction of limiting the extravasation might perhaps be attributable to the sound condition of this patient's vascular system in general, which, as evidenced by the condition of the cardiac muscles, was good to the last, the lesion being essentially restricted to the left auriculo-ventricular valvular opening. The evil effects of this lesion had begun latterly to tell upon the right auricle, the starting-point for cardiac failure; but even at the time of death the right ventricle was in good condition. The case, to my mind, illustrates well how a very great amount of incompetency of the mitral, if its effects are well compensated, may be borne, without producing distressing symptoms of a permanent character, provided no continuously acting disturbing force is introduced into the circulation. That force here was the repeated pregnancies, and a better illustration of their injurious tendencies could scarcely be found, according to my judgment. The pregnancy at the same time presented increased difficulty for the heart, and tended to induce hypertrophy in the organ so as to destroy the established equilibrium of the circulation. The labour and lying-in period aggravated all the existing evil conditions, but on the conclusion of these processes all went well till after the middle of the following pregnancy, and so on till the fatal result. The extreme irregularity of the heart's action was probably due to the imperfect manner in which filling of the large left ventricle was effected in the face of the extreme incompetency of the mitral. It would appear that this chamber only occasionally retained such a supply of blood as stimulated it to powerful contraction.

The following are the results of the above eight cases grouped in abstract.

CASE XIII.—Lesion slight. Patient after five pregnancies followed by easy labours, scattered over nine years, is now in as good health as at her marriage.

CASE XIV.—Has been twice pregnant. Condition precarious at present.

CASE XV.—Patient has been once pregnant. Suffers from hæmoptysis and chronic catarrhal pneumonia, with severe palpitation and breathlessness.

CASE XVI.—Patient taken severely ill during her first pregnancy. Premature labour supervened spontaneously at seventh month. Patient died three days afterwards.

CASE XVII.—This patient was pregnant for the second time when distressing symptoms arose. Death from exhaustion and pulmonary œdema twenty-third day after delivery. Labour happened at full term.

CASE XVIII.—Appears to be that of a primipara, but it is not clearly stated. Serious symptoms supervened during the last month, then became much worse after delivery, which was an easy one; but patient ultimately recovered. Labour was at term.

CASE XIX.—This refers to an elderly primipara. Embolism supervened in middle of ninth month. Labour was not very difficult. Patient able to leave the hospital after three months.

CASE XX.—This patient was watched through three pregnancies, and the evil effects of utero-gestation on the heart disease observed by comparison with the patient's condition in the periods between these pregnancies. Death occurred ten days after the third confinement.

In these eight cases, therefore, we find three deaths and five recoveries, or a percentage of 37·5 fatal cases.

When we remember that our cases of mitral stenosis gave us a fatality of 75 per cent., we are led to believe that mitral insufficiency is a much less dangerous complication of pregnancy than mitral stenosis.

We also observe a distinctly less tendency to premature

interruption of pregnancy than in the other mitral lesion; for, whereas the other cases seldom went the full time (eight out of twelve being certainly premature, and the ninth doubtful), of these cases only one led to premature delivery. It is to be noted, however, that in Case XX. it is impossible to make out whether the patient had reached the full term or not, owing to imperfection in the record. It has, however, to be stated that the cases embraced under this head refer to pregnancies of low number, as they include three, if not four, primiparæ, two cases of two pregnancies, one of three pregnancies, and one of five.

This consideration renders it hazardous to attempt drawing too strict a comparison in regard to the results of the two common mitral lesions, though on the whole it is, I think, obvious that great advantage lies with mitral insufficiency.

The next task is to record the five cases of aortic incompetency that I have been able to collect.

CASE XXI.—*Aortic Insufficiency, with Mitral Obstruction.—Pulse extremely Irregular during Labour.—Great tendency to Faint.—Delivery by Forceps.—Recovery.*

Mrs. F., primipara, aged twenty-three, confined on the 20th August, 1876.

Patient had an attack of rheumatic fever when fifteen years of age. At that period the physician in charge stated that her heart was somewhat affected. Ever since she has been liable to occasional feelings of breathlessness on going up hill, but has, on the whole, enjoyed fairly good health, and has been particularly well since her pregnancy began. I saw and examined Mrs. F. in June, 1876, with the following results:—Patient is well nourished, and looks healthy. Does not complain of breathlessness. Heart's impulse intensified. Apex beats between sixth and seventh ribs. Dulness increased; the transverse measures  $3\frac{1}{2}$  inches, and the perpendicular  $5\frac{1}{2}$ . Auscultation over mitral area reveals a loud, rough murmur, which precedes and leads up to the first sound. The latter is accentuated, and is immediately followed by a distinct blowing sound. This blowing sound is found at the aortic area to immediately follow the second sound, and it is audible also



at left side of xiphoid cartilage, where it is heard very loud but soft. At pulmonary area both the presystolic and the diastolic sounds are audible—the former only feebly. The pulmonary second sound is clear and accentuated ; the presystolic sound is not audible in the aortic area. The radial pulse is jerky, regular as to time, but not so strong as one would expect with apparently such a considerable amount of aortic insufficiency. Mrs. F. fell in labour about 2 A.M. on the morning of Sunday, 20th August. I was sent for at 7 A.M. I then found the head well down in the pelvis, the vertex presenting in the right occipito-anterior position, the cervix fully dilated, but the waters unruptured. The pulse was markedly irregular and feeble. The patient looked *pale*, face not being congested, as is usual at this stage of labour, and complained that she felt ready to faint with every pain. I ruptured the membranes and administered a tablespoonful of brandy, which had the effect of steadying the pulse for a time. The second stage proceeded very slowly, as the head was large, and the bearing-down efforts on the part of the patient were discouraged by me, as I noticed that during each pain the pulse became extremely irregular, and the patient felt faint. At first I hesitated to administer chloroform, but as the patient was anxious to have it, I ultimately gave it cautiously. I found that under its employment the pulse became stronger and steadier, instead of feebler and more irregular, as I had feared it might. After waiting for several hours I sent for my friend, Dr. Affleck, who came and administered chloroform, whilst I completed the delivery slowly and safely by the use of forceps. This was about 12 noon. The child was a large male. Immediately after the delivery of the child, the after-birth was spontaneously expelled. The hæmorrhage accompanying this process was rather profuse, but it was quickly brought under control by kneading the uterus. So soon as the uterus was emptied the pulse became again steady, and assumed the usual character of the aortic pulse. Both mother and child did as well as could be wished, and, I may state, are still quite well.

This was the first case of serious insufficiency of the aorta complicating pregnancy and parturition that I had to

deal with personally. I was consequently considerably concerned as to how it would turn out, and watched it with great care. It will be noticed that there is a certain amount of obstruction of the mitral as well. But that condition, though sufficient to produce a perfectly audible murmur, and to modify the quality of the pulse, is clearly not as yet great. It is also to be observed that the lesion was at the time of the delivery of eight years' standing, and that the compensation was good, and indicated no tendency to become disrupted except during the delivery.

So soon as severe labour pains were established, and particularly on the commencement of the down-bearing efforts, alarming symptoms arose in the form of great irregularity and weakness of the pulse and tendency to faint. To combat these symptoms, brandy was used in considerable quantity, and with some advantage. I felt in great difficulty as to whether I ought or ought not to administer chloroform in this patient's case. I reasoned with myself that, as the down-bearing effort was the condition that determined the greatest amount of irregularity of the pulse, and produced in my patient the feeling of faintness, anything that would diminish it was likely to do good. Besides, I felt assured that by carefully moderating the dose I could maintain a constant amount of stimulation to the circulation by means of the chloroform. The results fully satisfied my anticipations. The pulse became stronger, much more regular, and the patient's pallor of countenance less pronounced from the commencement of its administration. It is sufficiently obvious that such a case ought to be allowed to remain as short a time as possible in the second stage. I should have effected delivery earlier had it not happened that Dr. Affleck, for whom I sent to help me, was at the time on duty in a distant part of the city, and fully an hour was lost before he could be got.

It is to be observed that so soon as delivery was effected the serious symptoms subsided. This is particularly the case with disturbances referable to the effects of labour upon aortic lesions. It will be noticed that the same observation is made in regard to the other cases, though one of them

was so helplessly complicated that recovery was impossible, for various reasons that were established in post-mortem examination.

CASE XXII.—*Case of extreme Aortic Insufficiency, with great Mitral Obstruction.—Hæmoptysis frequent.—Cough, Dyspnœa, and Vomiting.—Premature Labour coming on spontaneously at end of Eighth Month.—Dyspnœa and repeated Attacks of Syncope during the Labour.—Death three weeks afterwards from Suffocation, Congestion, and Œdema of the Lungs.—Post-mortem: Mitral Orifice only admits the Little Finger to pass.—Aortic Valves reduced to mere Stumps.—Heart dilated and hypertrophied.—Lungs œdematous and congested.*

(Communicated to me by Dr. Ziegler, of George Square.)

Janet McGowan, aged twenty-four, primipara, was admitted into the Royal Maternity Hospital, Jan. 29, 1877, having been sent from the Royal Infirmary.

Patient had rheumatic fever three years ago. She never was strong, and has suffered from shortness of breath and palpitation on the slightest exertion since her illness. In July, 1876, she caught cold, and was confined to bed for a fortnight in consequence of an attack of rheumatism, which, however, was less severe than the first attack. She recovered from this. Last October, on a cold, damp morning, she was seized with a violent fit of coughing, and expectorated a considerable quantity of blood. She was admitted on the 11th January to the Royal Infirmary, under Professor Simpson's care, where she remained for three weeks, during which time she frequently coughed up blood.

We did not see her when admitted to the Royal Maternity Hospital, but on the 1st Feb. found her suffering from incessant vomiting and great prostration. Pulse weak and irregular, but not aortic. Temperature normal.

Condition on the 1st Feb., 1877.—Heart's apex beats between the fifth and sixth ribs, 4 inches from midsternum. Vertical dulness commences at the upper border of the third rib, and extends downwards till it meets the hepatic dulness. Transverse dulness at the level of the fifth rib commences at

the right edge of the sternum, and extends 4 inches. The first sound is loud and thumping in the mitral area, and a presystolic bruit is heard on auscultation. This varies greatly; sometimes it is well marked, at others almost inaudible. A loud double blowing murmur is heard at the base. A systolic bruit is plainly heard over the carotids. Over lungs the percussion note is fair. On auscultation, breathing harsh over base of right lung posteriorly.

Urine.—Sp. gr. 1021. No albumen.

2nd Feb.—Vomiting ceased. Patient feels better.

3rd Feb.—Felt well during the day. No vomiting. About 9 o'clock P.M. she began to feel breathless, with great pain over the apex of the heart. Slight cough. Some moist rhonchi are heard over the right lung, both anteriorly and posteriorly. Patient takes iron and digitalis.

4th and 5th Feb.—Patient continuing better.

6th Feb.—Premature labour came on. She complained of uneasiness during the day, and by 6 o'clock she felt slight pains. At the same time the os was found to be the size of a shilling, and the vertex presenting. Patient had taken little food during the day, and appeared very anxious and weak. An egg and brandy beaten up was administered and retained, though thrice before the same nutriment had been vomited. At 7 o'clock the pains were more regular and more frequent. She now, after showing some signs of dyspnœa, fainted. Small quantities of brandy were frequently administered, but notwithstanding she twice fainted during the following two hours, although the pulse kept tolerably good. Thrice she suffered from sharp attacks of dyspnœa. During this time it was difficult to keep her in bed, although when firmly told to lie down she could do so without any worse attack coming on. She had an enema at 8.30 P.M., which seemed to relieve her, for she remained tolerably quiet for an hour after, with regular pains. At 10 o'clock Dr. Ziegler, who was summoned, ruptured the membranes, with great relief to the patient, who afterwards breathed quietly. The labour terminated satisfactorily at 11.15 P.M.; child, a female,



weighed 5 lb. 5½ oz.; healthy; length 18 inches. Temperature after delivery, 98°9. Pulse 92.

7th Feb.—Patient very sick during the night, but was relieved after taking some brandy. Morning temperature, 98°6; pulse 80. Evening temperature, 99°4; pulse 78.

8th Feb.—Breathing much improved. She has again begun the iron and digitalis mixture.

9th Feb.—Passed a bad night. Rheumatic pains in the elbows, wrists, fingers, and right hip and knee. Quantity of urine for the last few days small. A little albumen present. Morning temperature, 100°; pulse 84. Evening temperature, 101°1; pulse 100. Patient taking acetate of potash and salicylic acid.

14th Feb.—Presystolic mitral murmur well developed, and thrill felt over the mitral area.

15th Feb.—Face swollen and puffy. Abdomen tympanitic. Rheumatic pains are now confined to the right hip and knee.

16th Feb.—Patient has had four attacks of dyspnœa. Moist râles heard over the chest.

24th Feb.—Patient's condition varies. Rheumatic pains in hip and hands. The attacks of dyspnœa are more frequent. For two days she managed to sit up in bed, the rheumatic pains which had previously prevented her having disappeared. There is also occasional cough, with expectoration of frothy mucus tinged with blood. Average temperature for the last ten days, morning, 99°6; evening, 100°8. Twice in the evening the temperature reached 101°8. Average pulse for the same time, morning, 94; evening, 108.

25th Feb.—Patient suffering much from dyspnœa, and unable to lie down.

26th Feb.—Patient very weak, and has suffered all night from extreme dyspnœa. At 2 P.M. she appeared somewhat better, and asked for a little tea, after which she slept for half an hour. At 3 P.M. she had another severe attack of dyspnœa, and though afterwards she seemed slightly easier she gradually became weaker, and sank at 4.45 P.M.

Post-mortem examination on Feb. 28th, conducted by

Dr. Littlejohn.—Pericardium thickened and roughened in some places, and contained about six ounces of serous fluid and a few flakes of lymph. Heart considerably enlarged from hypertrophy and dilatation. Great mitral stenosis, the orifice roughened, and scarcely admitting the little finger. Aortic valves reduced to mere stumps, and thoroughly incompetent. Cavities containing clots; from the right ventricle a decolourised clot was removed, together with one passing into the pulmonary artery and its branches.

Lungs.—Old pleuritic adhesions posteriorly. Lungs œdematous and congested, and also somewhat consolidated, but small cut portions did not sink in water.

Liver enlarged, fatty, and much congested.

Kidneys fatty and much congested.

Uterus.—Its inner surface shows the late attachment of the placenta. Externally there are some adhesions between it and surrounding structures.

It is extremely interesting to notice in this valuable case the points of similarity of lesions and symptoms existing between it and Case XXI. Thus we had well-marked aortic lesion, coinciding with constriction of the mitral orifice, and during delivery a pronounced tendency to syncope in both cases. Dr. Ziegler's case, however, was altogether a more serious one than mine, and presented many more of the usual disagreeable concomitants of the conjunction of heart disease with pregnancy. Thus we had not only a tendency to faint, but actually repeated attacks of syncope, notwithstanding the administration of considerable doses of brandy. Besides this there were pulmonary œdema, hæmorrhagic infarction of the lungs leading to hæmoptysis, frequent attacks of severe dyspnœa, and then premature delivery about the end of the eighth month, followed finally by death three weeks afterwards. The exhaustion of the labour, though it appears to have been an easy one, was no doubt a serious shock to the enfeebled and extremely diseased heart; and though this was partially recovered from, the unfortunate addition of an attack of subacute rheumatism, accompanied by pulmonary congestion and œdema, proved too much for the patient's recuperative powers.

In this instance the aortic insufficiency as well as the mitral obstruction was of a very extreme type. It is, indeed, strange that with such an amount of cardiac disease the patient could have lived so long, and more especially have survived her delivery. It is of importance to observe the very great relief afforded by evacuation of the liquor amnii. It is not stated whether it was greater in quantity than normal. But from what we know of the bearing of abdominal distension it seems to me we are entitled to assume that it really had been present in excess. That being granted, it is quite in conformity with what we know of the pathology of pregnancy that the removal of the liquor amnii, by giving more room in the thoracic cavity, would render the circulation less laboured within that space, and tend to relieve the urgent symptoms on the part of the heart and lungs, whilst it at the same time strengthened the expulsive power of the uterus.

An interesting question is suggested by this case—viz., what effect would the extreme mitral obstruction have upon the condition of matters? would it be beneficial or otherwise in its bearing upon the aortic lesion? To solve this point, we have to consider how danger is specially apt to arise in this lesion.

1. Fatty degeneration is apt to occur in the enlarged ventricle in consequence of defective nutrition of the heart, the coronary arteries not being filled sufficiently, because the incompetency of the aortic valves never allow a sufficient tension of blood in the sinuses of Valsalva to thoroughly flush them.
2. Danger is apt to arise from the hydraulic pressure of the column of blood, which regurgitates at each diastole with a force proportional to the perpendicular height of the highest part of the vascular system above the apex of the left ventricle.
3. Danger is apt to arise in consequence of the hypertrophy of the left ventricle leading to mitral incompetency, and thus setting loose an hypertrophied ventricle to pump with force, corresponding to its thickness, a stream of blood into the venous radicles of the lungs, and thus to directly oppose the normal action of the right ventricle and induce destructive congestion of the lungs.

The extreme mitral obstruction would have no effect upon

the first tendency to death, but by diminishing the velocity of regurgitation from the ventricle it seems to me quite possible that, within certain limits, it may have prevented in some degree the indirect evil effects of the aortic lesion in the third tendency to death mentioned. Upon the question whether it could modify the serious effects of the backward column from the aorta by limiting the distension of the ventricle before each systole, I really feel unable to venture an opinion, although from the way in which the pulse was modified in the cases I have watched, it does seem to me not altogether improbable. If these ideas are correct, the mitral lesion might have acted rather beneficially in these cases, in the way of lessening the evil tendencies indicated under heads second and third. But then if the mitral obstruction really modified in any way favourably the aortic lesion, pure and simple, it in its turn introduced fresh troubles in the form of dyspnœa, continuous pulmonary engorgement, &c. ; so that I fear, on the whole, the complication cannot be looked upon as a beneficial one.

There is no doubt but it did harm in Dr. Ziegler's case, by precipitating the fatal issue after delivery ; and that if it may possibly be an advantage during the delivery it is a complication of evil import during the lying-in period.

CASE XXIII.—*Aortic Insufficiency with Mitral Stenosis referable to an Attack of Rheumatic Fever five years before.*  
*—About end of Third Month of First Pregnaney severe cold caught from exposure.—About the Sixth Month severe symptoms supervene.—Pain in Left Chest.—Palpitation.—Tendency to faint.—Hæmoptysis.—Nephritis.—Convulsions.—Accouchement Forcé.—Death.—Post-mortem : Aortic Valves much diseased and acutely inflamed.—Mitral much stenosed.*

Mary Smith, aged twenty-six, residing at 219, High Street, Edinburgh, was admitted to the Royal Infirmary, bed 8, Ward XI., on 8th April, 1877. She complained of severe cough and hoarseness, also of pain in the left side, with palpitation and shortness of breath.

Four months ago the cough and hoarseness came on after



exposure to wet and cold. At this time she applied at the New Town Dispensary for medical attendance. This she obtained and was considerably relieved, but about the beginning of April she again became worse, her cough returned, and her voice was almost entirely lost. The pain in her left chest now also began, its first onset being sudden and apparently of a spasmodic character. Five years ago the palpitation began, and has gradually got worse till now. She had a severe attack of rheumatic fever at the age of nineteen, with which she was confined to bed fourteen weeks. She had no ill-health after the rheumatic attack till the palpitation began about five years ago. She has never been overworked, and has had a fairly comfortable home.

Her father died suddenly of paralysis. Her mother is still alive.

Patient's condition at the above date.—She is of average height, with ill-developed muscular system. For the last six months she has been losing flesh. Face flushed. Temperature  $98^{\circ}2$ . Perspires a good deal. She is seen to be in about the seventh month of pregnancy. The foetal heart and uterine souffle are both to be heard.

The condition of the circulatory system was noted by Mr. F. Russell, on March 20th, as follows, and appears to have been very much the same as when she was admitted to hospital. Pulse 110, irregular, bounding and receding rapidly from under the finger. Severe pain in the præcordia, with palpitation and frequent syncope on exertion. On placing the hand over the cardiac area the apex beat is felt to be bounding, irregular, and diffused, but best perceptible between the sixth and seventh ribs. There is also feeble epigastric pulsation, and between the cartilages of the fourth and fifth ribs on the left side, where a slight thrill can also be felt. On percussion perpendicular dulness is found to begin at the third rib and extend downwards to the upper border of the seventh. Transverse dulness at the level of the fourth rib extends 4 inches outwards from the median line. Listening in the mitral area the first sound is heard to be replaced by a rough blowing murmur propagated upwards towards the axilla, its

rough character being gradually lost as the axilla is approached. A well-marked diastolic murmur exists also in the mitral area. A presystolic murmur probably can be detected here also, but, from the rapid action of the heart, and the diastolic murmur, cannot be determined with certainty. In the aortic area the systolic murmur is loud and rough, and propagated up the carotid, while the diastolic murmur is also heard, but not loud. The second sound is barely audible in the aortic, but can be heard in the pulmonary area.

Respiratory system.—Cough was severe a fortnight ago, but much better now. Respirations vary between thirty and forty in the minute. Three weeks ago patient expectorated three or four mouthfuls of blood, but never spat blood before, and has not done so since. Now there is little expectoration of any kind. Vocal thrill is felt more distinctly on the right side than on the left, and at the right apex the percussion note is impaired, and the respiration is heard to be prolonged, but there are no accompaniments. Her appetite is bad, and her thirst great. She vomits almost everything she takes. Micturition is frequent and accompanied with pain. Treatment consisted in the administration of digitalis and an antispasmodic mixture, with mustard poultices occasionally applied to the chest. She was also put upon full diet with wine.

Her condition continued much as above described till May 24th. Her pulse occasionally rose some beats, but her temperature never went above normal. On the 20th and 21st of April it is noted that she spat a few mouthfuls of blood. Mr. Russell notes on the 20th of March that her urine contains about one-fourth albumen, while the hospital report records it as free of albumen on 24th of April, but on the 23rd of May it was noticed that she had slight œdema of the feet, and on testing the urine it was found to be albuminous. At 1.30 A.M., on the 24th May, she had a convulsion, and was delirious after it. Professor Simpson was sent for at 4 A.M., and she was ordered by him to be taken to the Maternity Hospital.

Mr. James A. J. Smith, house surgeon at the Royal

Maternity Hospital, reports as follows on the 25th of May :—  
“Patient was sent down here from the Royal Infirmary at 6 o'clock A.M. She was unconscious on admission, but started up in delirium every five or six minutes, and had to be constantly watched and held down by two nurses. Pupils not much dilated. Pulse was full and bounding, beating 144. Temperature 101°·1. Respiration, 48. Her urine was drawn off shortly after admission, and on being tested was found to be highly albuminous, sp. gr. 1010. Dr. Keiller saw her at 11 A.M., and induced premature labour by means of the india-rubber bags. At 12 o'clock he turned and delivered her of a seven months' foetus, which had evidently been dead for some time. After delivery her pulse was 116. She could not swallow, and an enema of beef-tea and brandy was administered, but she never rallied, and died at 3 P.M. Respiration continued for upwards of a minute after the pulse had become imperceptible.”

The delivery was easy, and the patient had no fainting during its course.

The post-mortem examination was made by Dr. Littlejohn twenty-six hours after death. Body fairly nourished. Surface extremely pale. Cellular tissue and subcutaneous fat œdematous. Uterus reached as high up as the umbilicus.

Heart.—About two ounces of clear serum in the pericardium. Right side of the heart distended by a clot. A decolourised clot in the right ventricle, becoming darker in colour as you approach the pulmonary artery, which is also filled by a dark, tolerably consistent clot. The right auricle is very much dilated, and its walls are extremely thinned. The right ventricle is also somewhat dilated, and its walls thinned, and covered by fat. Left ventricle is filled by a dark clot, and the aorta contains a similar clot. The walls of left ventricle measure at apex 5 lines, midway between apex and base 6 lines, and at thickest part (close to mitral orifice) 9 lines. The left auricle contains a large, dark-coloured clot, and is somewhat thinned, but not greatly dilated. Aortic valves greatly incompetent, and all the segments have well-marked recent vegetations. The aorta measures 2½ inches in circumference—no atheroma noticed. Mitral orifice

stenosed, only admitting one finger. The heart weighs 1 lb. 3 oz.

Lungs.—Fully half a pint of sanguinolent serum in the left pleural cavity. Lungs œdematous.

Slight chronic adhesions on the upper surface of the liver. Liver weighs 4 lb. 3 oz. Spleen normal.

Kidneys.—Left kidney weighs 5 oz. Capsule strips off easily. Cortical substance pale, medullary congested. Right kidney weighs 6 oz., and presents the same appearance. Examined microscopically both kidneys showed unmistakable evidence of parenchymatous nephritis in the second stage of this disease.

Bowels slightly adherent to the left lateral and posterior surface of the uterus. Right ovary contains a large, well-marked corpus luteum. Some hæmorrhage into the folds of the right broad ligament. Uterine wall measures in thickness  $1\frac{1}{8}$  inch, the cervical wall  $\frac{1}{4}$  of an inch.

This interesting case came under my notice through the kindness of one of the resident medical officers of the Royal Infirmary after I had read the corresponding part of my paper. My thanks are specially due to Professor Sanders and Dr. Keiller for allowing me access to the patient in the hospital and to the post-mortem, and also for the use of the notes of the case in their records.

In the first place, I would remark upon the frequency of the curious combination of aortic insufficiency with mitral stenosis. It is really strange to find it in three out of five cases collected as they turned up. I have already indicated how the complication may be supposed to act, and therefore will not recur to this matter.

There are, however, several points in this case that deserve careful consideration. First of all I should draw attention to the occurrence of acute endocarditis, which is in substantiation of the views expressed on this head by Lebert, Löhlein, and others. The inflammation in this patient's case was clearly of the plastic form, as there was nothing of a septic nature to be even suspected about her. The occurrence of acute parenchymatous nephritis is a very striking example of the



mutual interdependence of the vascular and renal systems during pregnancy. Doubtless the condition of the blood being, as is well known, during pregnancy very much allied to that of the blood in Bright's disease, strongly predisposed to the onset of the nephritis, whilst its tendency would be aided by the defects in the central circulating apparatus. On the other hand, so soon as the acute nephritis was established the diseased heart would find its work very much added to obstruction in the kidneys, the onset of the convulsions, &c. It is thus in no way difficult to account for the endocarditis when we merely glance at those disturbing influences.

By an unfortunate oversight the brain in this patient's case was neglected to be examined, so that we can tell nothing of its condition.

It is striking to notice how ineffective delivery was in affording relief to this patient. It was easily, safely, and skilfully performed by Dr. Keiller, and yet the patient sank all the same, no sooner apparently and no later than she most probably would have done had she been let alone. Doubtless the struggle in her economy was now placed in the vascular and nervous systems. The state of the genital system, though potential as a starting-point for the development of the influences that had by this time become all-powerful, had at this moment become, as it were, a collateral phenomenon of no great importance as regarded the issue of the combat. For this reason, as I think, there is always to be faced in those cases of eclampsia in connexion with pregnancy a considerable difficulty as to how far one is at liberty to interfere in the way of hastening delivery. As a prudent physician will always consider in writing a prescription whether he is certain that he is not ordering something to his patient's hurt, so a careful obstetrician, before doing anything in such a case, will always pebate well with himself whether he is certain that in endeavouring to free his patient from one risk, he is not involving her in another and a greater.

I need scarcely point out that the history of this patient's

condition illustrates well the evil effects of pregnancy in deteriorating the condition of a heart already threatening to yield.

It will be noticed that though there is a well-marked history of rheumatism of five years' standing, and though the patient had evidently not been well since, yet that an exposure to cold some time between the third and fourth month was the first commencement of serious illness. This attack was got over, however, and it was not till the third trimester of pregnancy was attained that the heart symptoms, in the shape of severe palpitations, tendency to syncope, troublesome cough, cyanosis, dyspnœa, and hæmoptysis, supervened. Removal from a cold and filthy dwelling in High Street to the comparative comforts of a hospital ward and careful medical treatment, relieved her somewhat at first, till the shadows that had been hovering around her suddenly began to close upon her, and the sad complexus of fatal influences recorded above proved too much for her feeble strength.

CASE XXIV.—*Severe Case of Aortic Insufficiency.—Violent Præcordial Pain and Dyspnœa about Twenty-eighth Week of Pregnancy.—Improvement under treatment for a time, but return of distressing symptoms on slight exertion.—Pregnancy interrupted by Spontaneous Premature Labour about Thirty-fourth Week.—Labour easy, and remission of urgent symptoms speedy.*

(Translated from Spiegelberg, *Archiv für Gynäkologie*, Bd. ii. s. 239 und folg.)

Patient thirty-four years old ; pregnant for second time. Previous pregnancy and labour natural throughout, and had occurred six years ago. The present one had been so up to the end of the first half. Violent palpitation, præcordial pain, and dyspnœa supervened about twenty-seventh to twenty-eighth week. Evidence of great aortic insufficiency, with roughening of the edges of the valves, but with aortic obstruction, was elicited. The left ventricle was found much enlarged, but no evidence of mitral incompetence. Cyanosis of lips, œdema (slight) of the feet, and a small amount of albuminuria present. Saline purgatives, quiet, and low diet

effected a beneficial change in the symptoms for a time, which, however, was completely undone by the patient attempting to return to her ordinary employment. An interruption to the pregnancy resulted about the thirty-fourth week. The labour was easy, and was followed by a speedy remission of the threatening symptoms.

*(To be continued.)*

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## CORRELATION OF THE PSYCHOLOGICAL AND PHYSIOLOGICAL FORCES.

By E. H. TRENHOLME, M.D.

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THE purpose of the writer in the present paper is to offer a solution of the hitherto unexplained relationship existing between mental impressions upon the pregnant woman and certain peculiarities of physiological development or conformation of the child in the uterus.

For centuries past it has been known that strong impressions upon the mind of a pregnant woman were capable of causing marks, malformations, and otherwise affecting the physiological development of the foetus.

Hundreds of such cases are recorded, and while their truth has been more or less openly admitted, their causation has been chiefly a subject of conjecture. That the relationship referred to can be irrefragably substantiated, so as to command the assent of all, is more than the writer can reasonably hope to accomplish, but he would, nevertheless, submit that sufficient reason, apparently, exists to warrant the presentation of the subject to the readers of this journal.

Many elaborate researches have been made with the object of ascertaining whether or not there exists any direct nerve communication between the mother and the foetus. The establishment of such a conjecture was eagerly sought after, with the object of explaining the relationship between maternal impressions and foetal formations. Hitherto, no

ascertained fact affords the slightest ground for believing that such a nerve connexion exists.

Even if this imaginary hypothesis were a fact, it would not shed the faintest ray of light upon the present discussion, nor offer a rational basis for the solution of the problem.

The theory of nerve connexion has to be discarded. There is no evidence to prove that peripheral nerves are able to materially influence the nutrition, development, or conformation of the parts they supply. Such a view would be tenable only upon the supposition that nutritive material was elaborated, as well as appropriated, in the parts affected, whereas physiology teaches us that nutritive matter is prepared, digested, and assimilated, in the digestive canal, &c., and that this work of elaboration takes place under the influence of the nervous system. It is by the digestive apparatus alone that the pabulum becomes converted into living matter, ready for tissue formation. We all know that no possible chemical combination can endow dead matter with life.

This vital process is carried on in the digestive organs, and its life-giving results distributed to every tissue of the body. I need hardly say that emotional disturbances exert a controlling influence over this important process. Depressing influences are able to arrest digestion, while cheerfulness and hope favour digestion. Individual experience will abundantly confirm the correctness of this assertion. This view of the subject, if correct—and that it is correct cannot well be doubted—leads to the very important conclusion that all the living matter required for tissue formation is prepared in the digestive apparatus and made ready for assimilation under the agency and control of the nervous system.

Not only is this the case, but we must concede to the same means and agency the power to reconstruct elements so as to become poisonous matter capable of destroying the child they previously nourished. Such a case is recorded in Carpenter's Physiology, where a mother applied her infant to her breast immediately after a period of intense excitement,



with the result of instantly destroying its life. There are other forms of excitement (known to all) capable of very materially affecting the quality as well as quantity of the milk. Illustrations of these views could be given to any extent, but such are not needed.

Traits of character, as well as expression of face and form of body, are also under the same controlling influence of the mother. Doubtless, many have observed the reproduction of the cast of countenance of some dear friend in the new-born child ; such resemblance, when very striking, will always be found connected with the mother's impressions while carrying the child. The influence of scenery, &c., is well known in the production of many great men, the mothers of such heroes often passing through most exciting and soul-inspiring scenes while pregnant. The direction given to thought and sentiment are capable of working marvellous alterations in the physiological development of the young.

Even in the more mature and advanced in age the power referred to is known to manifest itself, often in a marked degree. The importance of rightly appreciating the causation of such acknowledged phenomena is very great indeed. If we call in question the power of the digestive apparatus to form living matter suited for each particular tissue, and suitable for it only, we are shut up to an hypothesis that fails to account for the phenomena so frequently presented to us. Such a conclusion would lead us to ascribe formative powers to the tissues supplied by the blood ; whereas the view of the blood being the carrier of vital matter harmonises with what we know of physiology, and satisfactorily explains both normal and abnormal development. We must, however, always bear in mind that two important factors are to be noted as influencing development—viz., the quantity of the vital matter in the blood (in other words, its richness in the living matter), and the capacity of the individual tissues or being for assimilation. These factors necessarily vary with each individual, and counterbalance, to some extent at least, preponderating influences on either

side. Peculiarities of development will depend upon the activity and capacity of the parts supplied, as well as upon the supply of living matter suited for its development.

There are various reasons why we should hold the theory that the formative power exists in the digestive apparatus only. Each tissue and each part of the body differs from the rest. Symmetrical development, normal or abnormal, favour this same view. Were this otherwise, we should find one part taking from the blood the particles of living matter destined for its neighbour, with the result of building up a conglomerate structure, unlike what is seen in nature. Not only are both sides of the being pretty uniformly developed, but the symmetry of various diseases has been the subject of comment by many clinical writers. Recent research leads us to the conviction that matter (*pabulum*) receives its special properties or characters when it is converted into its living state ; also that "living or formative matter is alone concerned in the development and the production of those materials which ultimately take the form of tissues," &c. ; also that the blood is the channel of distributing this living matter, which has had its peculiarities and varieties of structure impressed upon it while being vitalised under the powerful control of the nervous system.

The next point to engage our attention is as to whether there is any reasonable proof or logical explanation as to how strong mental impressions can directly affect the nutrition and growth of various parts of the body, whether of the mother herself or of her child in utero.

The fact of mental concentration influencing physical development has been already alluded to, and requires but little attention. Exercise develops the parts, exercised ; not only is there increased blood supply, but the blood becomes richer in the living matter required, which in its turn is called into existence by the nerve force which is exerting its constant control over the formation of the living matter. The concentration of nerve force upon any part is well known to be capable of exerting a disturbing power.

Imaginary diseases are capable of becoming real by prolonged concentration of the mind. Even wonderful changes

of parts have been known to occur within short periods under such circumstances. All have, doubtless, heard of the case of the mother who saw her child's fingers crushed by a falling window, and was so powerfully affected by the sight that in a short time her own hand presented all the appearances of the mangled hand of her child. The mental impression in this case was strong and deep. The living elements destined for the particular part were made to suffer a radical change which brought about the consequences referred to. The changes that occurred in this case are analogous to those that took place in the milk of the mother which destroyed her child's life. The change in the living matter in both cases must have occurred during the vitalising of the pabulum. In the child, at least, the absence of nerve connexion precludes the possibility of tissue appropriation being the cause of such baneful changes.

The influence of the mind in the causation of disease, as well as in the cure of disease, is incontrovertibly established. We all know that a strong will exerts a magical power over the restorative powers of the sick. Herein, doubtless, lies the chief virtue of attenuations thinner than air. That they bring about great results cannot be denied by the unprejudiced observer.

It is in this same hypothesis that we explain the success of one practitioner over others of equal skill and judgment.

That we may reasonably entertain the view that each individual development is under the control of the nerve force seems a settled fact. Does the same force, exerted in the mother, control the formation of the child in her womb? History certifies to the occurrence of such cases too numerous to mention. Doubtless each individual practitioner has also met with cases illustrative of this fact in his own practice. That moral qualities as well as intellectual powers are thus communicated will probably be more readily granted, than that physical qualities, or changes, can be thus induced. Family traits of character are capable of transmission from parent to child, provided always that the progenitors are themselves endowed with soundness of body and mind. This latter quality is essential for the successful entrance of the

new being into life. Without this initial force the structure of the new being will be feeble and imperfect. This is especially the case with enfeebled fathers, whose lack of physical force causes a failure of the transmission of high intellectual powers. Hence the correctness of the saying, "a wise father, but a foolish son." Hence also the well-known fact that intellectual superiority is more dependent upon the qualities of the mother than the father, provided the father possesses a fair measure of intelligence, combined with an excellent physical development. These conditions are necessary to enable the new being to start in life with powers to appropriate the rich supply offered it by the mother.

As we have already seen, the qualities of the blood depend upon the vitalising power of the being. Also that this elaboration of dead into living matter is conducted under the control of the nervous system, any disturbance of which disturbs the balance between supply and demand, and impresses its vital peculiarities upon the development of the child.

Remarkable examples of this fact have come under my own observation.

In one instance a friend of mine, while carrying her child, saw a man going along the street on his knees, both legs having been amputated below the knee-joints. This sight so disgusted and horrified her that she could not banish the impression from her mind. This derangement of the nerve force prevented the proper elaboration of the living matter the parts required, and the result was that the limbs of her child were both absent to the same extent as in the person whose disfiguration had so miserably impressed her. In such a case there can be no gainsaying the assertion that the mental impressions upon the mother did so affect the tissue supply as already stated.

It might be asked why the extremities of the mother were not affected likewise, as in the case of the mother who saw her child's hand crushed. The only answer that occurs to me to give is, that the tissues of the adult are not so readily altered as are those of the plastic child in utero. The natural effect of rapidly-growing tissue would be to appro-



priate the altered pabulum more quickly than in the mature, and so also would such tissue more rapidly fail when such living matter is denied to it. The mother's parts would bear deprivation for some time without sensible damage. The tissues of the child would respond to such impression more quickly and permanently.

The natural law of supply and demand acts here as in other cases, whereby the supply is carried towards the point of greatest need.

A remarkable case of intra-uterine malformation came under my notice a day or two ago. The facts are, as follows :—When somewhat more than half through gestation, a pregnant woman's youngest child, who was out playing, was carried to her door with the skin of its forehead cut open, and the face, &c., covered with blood. The mother thought the child was dying, and held it in her arms, during which time she endured the greatest mental anxiety. When her child was born it had the side and front part of the forehead depressed, the eyes out of their natural position, and the well-defined cicatrix of a similar size, and in the exact position of the cicatrix on the forehead of the injured child. The condition of the mental impression was as correctly reproduced in the babe as if reproduced by art. The contortion of the head I attribute to the apparent contortion of the wounded child's head, as seen by the mother.

I mention these cases by way of illustration, but have met with many others during my professional life. Believing, as I do, in the hypothesis advanced, it seems remarkable that such cases do not occur more frequently. Such would doubtless be the case, the constructive powers of the mother being so great, were it not for the ever-increasing individuality and formative power of the fœtus itself. The powers of the mother to mould are balanced by the increasing powers of the fœtus. The extreme importance of these views can hardly be over-estimated, inasmuch as they are capable of such a boundless application. Their workings and influences surround us on all sides. The acknowledged importance of a sound physical development and elevated surroundings have an increased importance in our estima-

tion. Who can estimate the value of outside influences, especially upon the parturient woman? or to what extent the mental and physical perfection of our race may be advanced?

The views I have offered in this imperfect paper explain the reason why children of a second marriage frequently resemble a former husband; also why a wife who has borne children acquires a resemblance to her husband. In the first case the mother's blood is charged with living matter from the former child in utero, and which, being present, manifests its power over the growth of the new being. In the other case the mother comes to resemble her husband because the foetus imparts to her by the same agency some of its own character, which it received from its father when it commenced life.

As might be expected, the resemblance becomes more and more markedly present by each addition to the family.

I might have dwelt upon the influence of the picture of a loved friend in moulding the features of the child in the womb; also of the same result following the sojourn of a dear friend while childbearing; but my object is not indefinitely to apply the views advanced, but rather to offer a solution to a problem that has attracted the attention of medical men in all ages, and which was the theme of my graduating address some fourteen years ago.

We, therefore, conclude that the psychological and physiological forces are correlated to each other, because

1st. That the body is built up of living matter, prepared under the controlling influence of the nervous system.

2nd. That each tissue has the power of appropriating, but not of forming, the living matter suited to its growth.

3rd. That the impressions made upon the mind of an individual can effect changes in the growth and conditions of any part of the body.

4th. That mental impressions upon a pregnant woman are capable of determining the physiological conformation of the child in the uterus.

## ON A FORM OF INFANTILE PYREXIA ASSOCIATED WITH DISORDERED BOWELS.

By J. AIKMAN, M.D.

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DURING the past five years I have been carefully observing the relations of the body temperature to the disorders of the intestinal canal in children. These observations have led me to a point from which I am able to distinguish a form of pyrexia, shut off on the one hand from the acute febricula of undigested food, and on the other from muco-enteritis, or infantile remittent. It is undoubtedly more difficult to discriminate those cases from the latter than from the former class ; but I venture to hope that the description which I propose to furnish will enable the reader to recognise the distinction with sufficient ease.

Most practitioners who have dealt much with diseases of children will recognise the two following pictures :—

I. At any season of the year, you are sent for, in the evening or early morning, to see *at once* a child who has been very well all day (or very ill all night, as the case may be), but was suddenly found to be in a “burning fever.” You find the face flushed, the skin hot and dry, the lips dry and often cracked, the breath loaded, the tongue coated, and the respiration rapid, but without any chest sign. On inquiry you find that within the last forty-eight hours either the child has eaten something obnoxious, or has been in the way of getting it. Even should the history be deficient in this respect, the purge which you give reveals the existence of offending matter, most probably in the form of skins of fruit, or dried currants. When the purge has acted the temperature falls, and with a very little care the patient gets well.

Sometimes the attack is ushered in by a convulsion, and I have observed that this is most often the case when the child has at the same time been over-fatigued, as by a holiday outing.

Let me call attention to two points in this description—first, the suddenness of the attack ; secondly, its connexion with some particular *kind* of food.

II. In the early spring, most often in February or March, you receive a message to call and see a child "some time during the day." You are told that the child has not been well for some days, but that, "thinking it was only a cold," the mother has contented herself with keeping the little patient in the nursery. You find it on the nurse's knee, or the nursery floor, not playing, but discontented and unhappy. You endeavour to engage its attention, but fail to arouse its interest. You may examine it, if you please, but you must not disturb it. The voice is hoarse and croaking, the hand moist and hot, and the breathing thick. The lips are cherry red, and glisten; the eyes, surrounded by dark circles, are heavy and dull, and a snuffling in the nostrils is slightly suggestive of catarrh. The tongue is not very heavily coated, but it is large, and the papillæ are prominent, while the breath smells sweet, almost like the breath of pyæmia. You take the temperature, and are surprised to find it very high, for a temperature of  $105^{\circ}$  Fahr. is not, in this disease, incompatible with a moist skin. So true is this that the combination excludes all other infantile diseases with which I am acquainted except acute rheumatism. Led by the rapid breathing to examine the chest, you find crepitation over one or both bases. The answers you will receive concerning the state of the stools are very various, and do not assist you much. On inquiry you will also learn that the sleep has been disturbed, not often sufficiently to arouse the nurse, but simply starting and moaning, and sometimes with the eyes half closed. If you solicit the cerebral macula it may or may not appear.

Such is a fairly general description of the state of a certain class of cases when first seen. Some of these develop further into infantile remittent fever; but most may be curtailed by proper treatment within much more narrow limits. The necessary treatment is persistent purgation, and its results are eminently satisfactory. Constipation more or less complete is almost universal, and in the description which follows I would have it understood that free catharsis was always insisted upon.

*Temperature.*—In very few cases does the disease com-



plete its course without having attained a temperature of  $104^{\circ}$  Fahr., but a greater or less temperature seems to influence very little, if at all, the duration of the disease. In large children who are well covered with fat, and whose fontanelles have remained long open, it is, as a rule, higher than in those who are less fat, and more closely knit. There are diurnal exacerbations, but they do not follow the time of day so closely as they follow the occurrence of the stools. A marked fall in the temperature usually precedes a copious liquid evacuation, and is accompanied by a pallor in the face.

The fall in the temperature which marks the crisis is seldom absolute, that is to say, the previously high temperature falls suddenly, not to the normal, but to a degree or a degree and a half above it, and maintains that standard for two or three days.

The *nervous symptoms* are mainly those of intestinal irritation—general muscular twitchings. It is, however, useful to note the obscured special senses, because this fact contrasts strongly with the keen special senses of the early stage of tubercular meningitis, with which the disease is apt to be confounded.

The cerebral macula may often be procured during the stage of greatest irritation.

Sometimes the nervous symptoms reach the gravity of convulsion, though much less frequently in this form of pyrexia than in that which follows the ingestion of improper *kinds* of food. How very grave the nervous symptoms may sometimes be is to be learnt from the following case. In February, 1876, I was called to see a boy five years of age, who had four days previously fallen and cut his forehead. Without medical advice the parents had plastered over the wound. When I saw him the forehead was swollen and tense, and the eyelids œdematous. I opened the wound with a probe, and allowed some pus to escape, after which the child did well. Three weeks later I was called in haste because he had had a convulsion. Before I reached the house he had a second fit, and when I saw him he was totally unconscious. The pupils were widely dilated and

immovable, the right side of the body and left side of the face flaccid and motionless, while the remaining parts were still twitching and convulsed. The eyes were turned strongly to the left side, but not squinting; thumbs not bent in. The temperature was  $103^{\circ}\cdot8$  Fahr., the pulse rapid and irregular, and the respiration very irregular. The bowels had acted during the convulsion. I ascertained that for four days previously the child had been by turns dull and excitable; but taking into account the previous history, I gave a grave prognosis, which was not, however, fulfilled, for in three days the paralysis had disappeared, and the temperature was normal. The boy has had no illness since that time.

*Tongue.*—The state of the tongue varies in all respects but one. The papillæ are enlarged. The coating may be thick or thin, white, yellow, or, less often, brown. I have never seen the red, raw tongue in these cases.

*Stools.*—Much of the trouble which attends the diagnosis of this class of cases would be obviated if the mother or nurse could give an accurate description of the state of the stools. The stools passed naturally are few and scanty, and vary in colour from a dark green to a pale yellow or curdy white. If dark they are usually offensive, and the constipation is more tractable than it is with either of the other forms. The stool which follows a purge ought to be very liquid; if it be not so the purge should be repeated. When the stool characteristic of the disease has been procured it will be found to have an earthy character, the first stool being fairly copious and the after stools by no means copious, but having the same appearance. This appearance is maintained until the temperature falls to about  $100^{\circ}$  Fahr., which precedes the appearance of natural motions. Purgation should still be kept up, for a day or two later one or more stools containing shreds of mucus in abundance will be passed, and then the temperature will become absolutely normal.

*Pulse.*—The pulse is always rapid, full in the early stage, and later hard and wiry, almost like the pulse of peritonitis.

*Respiration.*—The respiration is rapid and laboured, almost like that of early bronchitis. An examination of the chest does not at first dispel this fear, for crepitation is usually present over one or both bases. This crepitation is not,

however, inflammatory, and, as observed from day to day, is variable and inconstant. It resembles more than anything else the passive congestion of advanced fever.

The *Urine* is scanty and high-coloured. Sometimes none is voided for twenty-four or thirty-six hours at a time.

*Duration.*—The duration of the disease is ruled partly by treatment and partly by the age of the patient. It is ruled by treatment, because if purgation be not carried out the symptoms may be prolonged over twenty-one days, or even, in one case, sixty-three days. It is ruled by the age of the patient, because in very young children the usual course of seven days may be shortened by a day or two.

*Cause.*—The cause lies in the bowels. As in the first class of cases the cause of the disturbance is an accidental error in the quality of the food, in these cases the cause is an habitual error in its quantity. The disease occurs most often in the early spring, when inclement weather curtails the amount of exercise to which the child is accustomed. Such an accident as a fractured bone may have the same effect at any season, but in all cases, if the history be carefully examined, it will be found that the disease is associated with full feeding and curtailed exercise.

I am unwilling to speculate upon the pathology of a class of cases concerning which I have no post-mortem premisses ; but, so far as observed facts can guide me, I seem to recognise a disproportion between the amount of food supplied and the fluids furnished for its digestion and assimilation.

*Treatment.*—Catharsis is the great indication. If the motions are from the first offensive, senna or castor oil alone are required, but if they are pale-coloured and very hard a mercurial with rhubarb, scammony, or jalap, proves more useful. If the tongue be dry, sulphate of magnesia with an acid seems to be the best combination.

The adjuvant treatment is equally simple—a weak alkaline solution being all that is necessary.

Not less important is the careful regulation of the diet, which should consist exclusively of milk—even farinaceous stuffs and the all but irrepressible beef tea being strictly forbidden.

## Reports of Hospital Practice.

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### CASES OCCURRING IN THE OBSTETRIC PRACTICE OF THE LONDON HOSPITAL.

By G. ERNEST HERMAN, M.R.C.P., Assistant Obstetric Physician.

#### *Abscess, apparently of Uterine Wall—Discharge through Umbilicus—Recovery.*

(Reported by Dr. A. G. BUCKLAND, Resident Accoucheur.)

M. O., aged twenty-three, admitted January 31st, 1876. The patient stated that her previous health had always been good. For six months previous to marriage had suffered from pain at menstrual period, coinciding with a temporary cessation of the flow: no menstrual pain before or since. She married when aged twenty-one. The first labour was an easy one. The second took place three months ago; it lasted thirty hours; no instruments were used; there was no "flooding"; she kept her bed for a fortnight afterwards. A day or two after delivery she began to have a pain in the back, which was of a "dragging" nature, and about a month after delivery became so severe that at times it made her cry, although it did not oblige her to go to bed. Slight vaginal hæmorrhage lasted two weeks after delivery. The secretion of milk was scanty, and left her in a week. She does not recollect shivering, but since two or three weeks after confinement has suffered from cold sweats at night. For about a month after delivery had no appetite, and was very thirsty; vomited once or twice about a week or two after the confinement. About a month after her confinement the stomach became very sore, and remained so until admission. Says she has got very thin.

On admission she was thin, pale, and anæmic, though not emaciated. On examination, the uterus was found uniformly enlarged, reaching a little above the umbilicus, rounded, hard and firm; the vaginal portion short, not fissured, rather patulous; the sound passed in the normal direction between five and six inches. The uterus was not fixed, but as freely



movable as one would expect one of its size to be. No discharge of any kind. Appetite was good, and she slept well. She complained of pain in the stomach, but said she felt otherwise well. Urine contained no albumen.

On March 20th it was noted that she was in no pain unless she walked; was looking better and feeling better; but had not regained flesh.

While in hospital the temperature fluctuated irregularly, once reaching 101·4; it was never above this point; during the last fortnight of her stay it was normal.

April 8.—She was discharged at her own request. The uterine tumour the same as when admitted.

April 15.—She attended as out-patient. Complains of pain in stomach and round back, which “draws her double,” and prevents her from sleeping. Walks with slow steps and body bent forward.

May 20.—She says that on the 18th something broke at her navel, and about a quarter of a pint of yellow offensive discharge came from it. A spot of ulceration at umbilicus, but the opening was not found. Uterine tumour much the same.

July 8.—The discharge from the umbilicus, she says, has continued copiously since last note. The uterine sound passes five inches, in normal direction. A probe introduced into the umbilical opening passes downwards in the axis of the pelvic inlet for four inches. The sound in utero and the probe in sinus cannot be made to meet, although they seem parallel in direction and not far from one another. Umbilicus seems dragged downwards and inwards.

July 11.—Readmitted. Discharge very fœtid. A piece of india-rubber tubing was put into the sinus, so as to maintain a free exit for the discharge.

August 2.—Discharge reported to have ceased. Tube removed, and patient allowed to get up.

August 4.—Discharge copious. Temp. 101°. Tube re-inserted.

August 9.—Temperature normal; discharge scanty.

August 15.—During the last few days has been allowed to get up, a bandage having been adjusted so as to keep the

tube in its place. Discharged at own request, being made out-patient.

September 9.—The discharge being much less, on the 6th she removed the tube. The probe now enters the sinus about four inches. The uterus reaches about two-thirds of the distance between the pubes and umbilicus; per vaginam it appears drawn up. It is not much bigger than a normal organ. Can walk well, feels stronger, and has gained flesh.

December 2.—No discharge from umbilicus. Can walk well; menstruation regular. Has gained flesh, and thinks herself as well as ever she was. Uterus reaches a little more than half way between pubes and umbilicus; it reaches rather further to left than to right. Sound passes three inches; no retraction of umbilicus.

March 2.—Considers herself quite well. Uterus freely movable; it does not now reach so far as half way between pubes and umbilicus.

In this case the purulent collection, or, to speak strictly, the sinus into which the probe passed, was immediately behind, and close to, the cavity which the uterine sound entered to the extent of five inches. Uniform enlargement of the uterus, with proportionate elongation of its cavity, preceded the purulent discharge. This purulent discharge was followed by diminution in the size of the uterine tumour and the length of its cavity. The uterus was never at any time fixed until the formation of a sinus at the umbilicus. From these facts it would seem that the purulent collection must have been situated in the posterior uterine wall. Whether in the muscular structure, or between that and the peritoneum, there seems no evidence to show; but were it (from the beginning or later on) in the latter position, its progress forwards over the summit of the uterus on to the bladder, and then along the urachus to the umbilicus, is explained. The rarity of authentic cases of abscess of the uterine wall seems to me to make this one worth publication.

*Extra-peritoneal Hæmatocoele, escaping from Pelvis through Lesser Sacro-Sciatic Notch, and causing Swelling of the Buttock—Hæmorrhagic Diathesis.*

(Under the care of Dr. LANGDON DOWN. Reported by Mr. H. E. PRICE, B.Sc. (Lond.), House Physician.)

H. I., aged twenty-four, admitted May 12th, 1876.

She gave a history of having been always very liable to bleed much from slight causes. A little thing produced a bruise. Her finger, she thinks, bled more than most people's if pricked. Menstruation was profuse; her nose often bled; at her confinement she lost much blood.

For three years she had noticed that the right hip was larger than the left. She ascribed this to a fall downstairs about three years ago. The injury was not enough to make her keep her bed; for she walked about as usual the next day.

She had had one child, between four and five years ago: a good labour at full term.

Twelve months ago she had rheumatic fever. For the last six months she had suffered from cough, palpitation, shortness of breath, and occasional coughing up of blood.

Had had a white discharge for eleven months. Two months ago she thought she miscarried. Since then she had been losing flesh. She said that she was lame in the right leg for three days before admission. She had a "cramping pain" going down the outside of the right thigh to the foot, which she thought to be rheumatism.

When admitted she was poorly nourished. Complained of pains in various parts, apparently rheumatic, but there was no objective evidence of arthritis. A soft systolic murmur was heard over the heart's apex. Her finger-tips were slightly clubbed. Urine albuminous. No œdema; no ascites. Temp.  $101^{\circ}4$ , to account for which nothing could be discovered except the pains.

On May 20th copious hæmorrhage from the vagina took place. The usual menstrual period had occurred the week before. Ergotine was injected subcutaneously, and ice applied locally, and the hæmorrhage stopped. On May

22nd it recurred, and again on May 24th. On the 25th a careful examination was made. It was noted that "a hard, firm, smooth, non-fluctuating mass was felt, equally from rectum and vagina, projecting from the wall of the pelvis on the right side. The uterus was pushed over to the left side. Nothing could be detected about it digitally to account for the hæmorrhage. She said the parts were sore : and there was some spasm of the vagina. The right buttock was seen to be fuller than the left ; from the lowest sacral spinous process to the greater trochanter measured an inch more on the right than on the left side. There was no pain on manipulation of the gluteal region."

On May 27th the urine was found to contain blood.

On May 28th, on June 3rd, on June 5th, and on June 9th, further profuse hæmorrhage took place. Each outburst of bleeding seemed to be checked by the subcutaneous use of ergotine. She became exceedingly anæmic. Incontinence of urine was at times troublesome, and she complained much towards the end of cramps in the legs, especially the right. A most foetid odour was exhaled from her, which, for the sake of the other patients, necessitated her removal to a separate ward. She died on June 10th.

The autopsy was made on June 11th by Dr. Sutton, and the following is from his report :—

The lungs were anæmic. Heart small, but otherwise healthy (valves, orifices, pericardium). Lardaceous disease of liver, spleen, and kidneys.

The account of the pelvic organs is extracted verbatim :—

"On introducing the finger into the vagina, a firm, tough, thickened substance was felt on the right of the cervix, extending a little way down the right wall of the vagina. It was not nodular, but a uniform thickening. A firm, hard substance was felt in the position of the right broad ligament, united to the bladder ; but the peritoneum over it seemed intact. On cutting into it some fibroid substance was seen, firm and tough, about a quarter of an inch thick. Beneath this a quantity of brownish, chocolate-coloured, soft substance, evidently altered blood, was seen. There was a good deal of this altered blood enclosed in a cavity which



had a distinct, pigmented lining membrane. This extended down by the side of the uterus, back to the sacro-sciatic notch; it had ploughed up a portion of the obdurator internus muscle having its origin in this part, and passed by the side of the tendon of this muscle, outside the pelvis, for a distance of about two inches. The uterus itself was healthy."

I am indebted to Dr. Langdon Down for permission to publish this case. The extremely feeble condition of the patient, and her defective memory, prevented much detail being obtained about the previous history.

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## BRITISH MEDICAL ASSOCIATION.

*Address in Obstetric Medicine, delivered at the Forty-fifth Annual Meeting of the British Medical Association, held in Manchester, August 7th, 8th, 9th, and 10th, 1877.* By ROBERT BARNES, M.D., F.R.C.P., Obstetric Physician and Lecturer on Midwifery and Diseases of Women at St. George's Hospital, &c.

### THE SCIENTIFIC AND POLITICAL POSITION OF OBSTETRICS.

MR. PRESIDENT AND GENTLEMEN,—The more favoured sisters Medicine and Surgery having presented their Addresses, Cinderella, in the guise of Obstetrics, takes her turn.

The President of the Obstetric Section has said fitly and gracefully that there was something specially becoming in giving an Address on Obstetrics here in Manchester, the spring whence so much obstetric knowledge has flowed. Manchester in return, I hope, will not frown on obstetrics as Jupiter tonans et pluvius frowned upon her elder sister on Wednesday. I could not hope to charm, notwithstanding, as she did. But I have misgivings that I am now suffering the just penalty for my rashness in accepting the task proposed to me by the Council to give the Address on Obstetrics to an audience so peculiarly qualified to criticise, as they ought to do, any short measure of justice to a subject which is so much their own. It is very easy for the Council to select a victim from its flock, and bid him be eloquent, profound, and instructive for their entertainment. But the victim looks upon the matter in another light. To him it may be torture; a process of mental vivisection which ought to fall under the ban of that mediæval Act which our collective wisdom and humanity enacted a year ago, when in a hurry to get away to their shooting. I have heard men express gratitude for honours like this conferred

upon me. No such sentiment glows in me. The feeling that possesses me is of an opposite character. I mean to indulge it. The personal grievance will find relief in telling some things which, I fear, will not be universally acceptable. But you have given me your ears for an hour ; and courtesy, if not duty or inclination, will compel you to listen.

In selecting me for this address, it is to be presumed that the Council wished to give an opportunity of putting the case of the obstetric branch of medicine in a conspicuous manner before this representative assembly. Some who have preceded me in this task have chosen to make a retrospective survey of the scientific work done in the department, recording its gains, and pointing the road to future achievements. Others, less expansive, have sought to illustrate some particular subject. I will not attempt to emulate either, unwilling to excite comparisons little flattering to myself. My theme will be the scientific and political relations of obstetrics to medical science and the organisation of the profession. The theme is ambitious enough. I cannot hope to do it justice ; but I may succeed in awakening attention to some points scientific and political, which it may be to the interest of us all to consider.

In these days, there is a rapidly growing tendency to split up the study and practice of the healing art into sections. This tendency is in great measure forced upon us by the prejudices of the public, our employers, who, out of excessive veneration, I suppose, for that incontestable maxim of the father of medicine, "Art is long, and life is short," will not believe that life is long enough for any man to acquire a competent "all-round" skill in medicine. I am afraid it is hopeless to struggle against this tendency. It is not unsupported by facts and reason. But it entails obvious and serious drawbacks. Against these it is our duty to guard. Medical science naturally takes its form, its direction, its laws, from the great centres of civilised life. In these centres are brought together the means and the great inducements for the cultivation of medicine by theoretical study, by practice, and by teaching. And the social, commercial, and political supremacy of these centres is as naturally asserted in the diffusion of medical law. Now, it is in these centres, the seats of scientific culture, that this process of splitting-up exerts itself with irresistible force. In the periphery of our human system, the necessities of the detached communities compel to the concentrated application of knowledge. Here a man will only be credited with knowing one thing. In the outskirts of the world, a man must treat as best he may all the ills that flesh is heir to. It is very possible that we, who stand at the centre, and therefore flatter ourselves at the head, whence science flows over the globe, might receive our own knowledge returned to us fructified a hundredfold under conditions beyond our range ; knowledge that would extend, correct, it may be rebuke, our own. But it is unfortunate that the very conditions which compel our distant brethren to cultivate all departments of

medicine alike also too frequently prevent them from moulding their experience into forms, from deducing principles and laws which can be sent home to us. Hence, an enormous waste of absolute knowledge, and of suggestion for critical comparison and correction. Hence, the increasing adoration and tyranny of the *idola fori*, that is, of our own central authority; and the perpetuation of a state of things which is tending more and more to the study of medicine in disjointed bits, to the neglect of those grander lights which can only be caught by a well-balanced study of all in their mutual relations. There cannot be a doubt that this fragmentary study opposes and retards those generalisations which are the natural outcome of extensive and varied observations; and which, by revealing the dominion of universal laws, are the highest expression, the culminating triumphs of science. So long as medicine shall be studied in fragments, and not as a whole, so long must we be content to grope in the dark, happy to catch a glimpse here and there of a law working in the narrow field of our observation, never to realise the truth that the little bit of law we see dimly is but a particular application of a law ruling all the functions of life. Thus, what we see bit by bit, by accidental flashes of intuition, will almost necessarily keep us floundering in a turbid sea of contradictions. So various, so unequal are the powers of men for observation, for reflection, and especially for questioning nature by experiment, that, when any one attempts to bring together into one focus the experience of other men who have been examining one subject—say one particular subject, physiology, and its outcome pathology, from different aspects—he is sure to be perplexed by endless diversities of opinion. And yet we are confident that these diversities of opinion are not diversities of fact. There is no faith in the world of law, of politics, or of theology so clear, so firm, as the faith of the student of nature in the harmony, the unity of nature's laws. We do not believe that the operation of these laws can be for a moment suspended—that they are ever in conflict. The opposite belief, the most degrading form of superstition, the most arrogant form of scepticism, which attributes to the Almighty Power the fickleness of the negro fetish, is not ours. Whenever we, observing nature, see, or think we see, facts or processes that cannot be reconciled, we conclude humbly that either our observation or our reasoning is at fault. Thus, we are driven to renew and extend our observations. And, ever guided and sustained by abiding faith, we possess a sure touchstone of truth.

But how, you will ask, am I justified in dwelling on these general and trite reflections? Simply because, however universally their abstract truth is recognised, in practice they are too much neglected. Is medicine studied as a whole? The entire course of education and practice, at least in this country, declares that it is not. I therefore proceed to the strict discussion of my theme. I proceed to show, by a few imperfect but striking illustrations, how medical science and humanity suffer by our neglect.

It will be admitted that the true foundation of all medicine lies in the study of physiology. It will also be admitted that the study of physiology cannot be thoroughly pursued without the aid of experiments. We must observe Nature not only in her ordinary moods; we must question her workings under conditions devised by science. It may be said with truth that the whole study of medicine is but a part of the study of physiology. All disease is the reaction of the living economy under the influence of conditions accidentally applied. These accidental conditions are in reality experiments. If we could watch and take accurate note of all the actions and reactions of the economy under these accidental experiments, many pathological problems that continue to baffle our speculations would be solved; we should certainly detect in many cases the links that are now missing in the chain of evidence. We should thus seize the clue to the institution of special experiments, crucial and luciferous. There is great hope already in this direction in the study of the specific or zymotic fevers; and syphilis has been studied with considerable success in this way. But, in a vast number of instances, embracing those which follow upon or which induce chronic organic or structural alterations, the factors concurring to the results we see are often so manifold, so intricate, so complicated, so protracted in their operation, as to defy continuous or complete observation and analysis. Their origin is seen dimly through the mist of time; their progress is traced doubtfully through the myth of history. Now, it is precisely in many of these diseases that woman presents the pathological factors in the simplest form, under conditions of time that admit of the most complete and satisfactory observation. Pregnancy taking place in a healthy woman may be regarded as an experiment performed under the most simple conditions, from which the complications that disturb and thwart observation of disease in men are eliminated. Starting with a young and healthy woman, we are enabled in the first place to witness a series of the most interesting and instructive physiological phenomena. Body and soul are changed. The nervous system—cerebral, spinal, ganglionic—suddenly develops new forces. The natural, quick, sensitive, mobile nerve-action of woman is rapidly exalted. Concurrently with this new nervous force, the vascular system undergoes a remarkable development of growth and tension. The blood is no longer the same in constitution or in volume. The machinery which has to distribute the altered blood acquires new force. These changes in the blood in the circulatory apparatus, in the nervous system, occur so closely together in time, that it is a matter of reasoning rather than of observation to determine which takes precedence. It is difficult to understand how the constitution of the blood can be suddenly affected. The passage from its ordinary state to that in which we find diminution of red corpuscles, increase of the white corpuscles, increase of the fibrine and water, must surely take a little time. It is probably the result of certain processes of nutrition going on in the uterus. But the nervous commotion is



almost instant ; it is at once manifested in the increased mobility of the emotional and diastaltic functions. The subject is at once more responsive to external impressions, physical and moral. The frog itself will not furnish to the experimental physiologist more striking evidence of the play of the diastaltic function than the pregnant woman, not alone during the almost purely diastaltic action of labour, but often throughout the course of pregnancy. One of the most remarkable phenomena, where all are remarkable, is, however, the sudden direction of newly developed nerve-force to one particular region—the uterus. At least, whether we detect growth of nerve there or not, we must perforce assume that nerve-force goes thither in increased supply to direct and maintain the increased supply of blood, to furnish the materials of growth of the uterus and the embryo. This new regional vascular development and concentration of nutritive activity asserts its predominance over the whole organism, for elsewhere muscle and fat and other tissue commonly waste. Although the most active building work is going on in the uterus, the rest of the organism is affected. It is probably as a consequence of the great local constructive work that the blood undergoes its modifications, and that the heart and vessels generally are changed in structure. The work going on in the uterus, calling for more and more blood, induces greater vascular activity, greater driving force : and, wherever this is exerted, the driving organ must increase in force—that is, in bulk. It is also more than probable that the altered quality and quantity of the blood exert a special influence upon the dynamics of the circulation. These new conditions involve augmented vascular tension ; a condition that is now expressed and measured by the sphygmograph.

Now I must crave indulgence whilst I glance at some associated phenomena that keep within the range of physiology. Often from the moment after impregnation, the exalted nerve-tension is manifested in the increased play of the diastaltic function. The legs are liable to sudden uncontrollable twitches ; vomiting, the old familiar symptom, sets in. Under no other states do we ever see such proofs of the intimate independence and play of the cerebral, spinal, and ganglionic systems. The emotional exaltation acts upon the diastaltic system, and these together upon the ganglionic or vaso-motor. The proclivity to convulsion is singularly increased. Concurrently with this augmented nerve and vascular tension, there arises increased strain upon, and therefore increased development of, the entire glandular system. This change may be assumed to start from the new development of the lymphatic vessels in the uterine vascular region. Once started, every gland in the body feels the impulse, and assumes unknown activity. The breasts grow under a special impulse analogous to that which moves the uterus ; they form a secondary centre of vascular activity. But all the other glands are called upon to act in a subsidiary manner. The respiration is increased ; more carbon is exhaled ; the skin is more active, throws off more water ; the liver and

kidneys, the intestinal glands, do more work. The waste materials resulting from the active building process going on in the uterus, added to the ordinary waste from the general economy, demand more active emunctories; and the reply to this demand is seen in the work and products of the glandular system. The glands are doing double duty. The first duty—the discharge of used-up matter—is obvious enough. But there is another hardly less important, although less commonly recognised; it is the regulating action upon the nervous and vascular system, for which the safety-valve and the governor of the steam-engine offer the readiest illustration. The ordinary degree of vomiting, we know, is attended by relief. Two phenomena especially are observed. There is the nervous explosion, a kind of passing storm, in which I see the characteristics of convulsion. This is a mode of discharge of excess of nerve-force—of reducing tension. Then there is the secretion, the discharge of a quantity of fluid from the glands of the stomach. This gives relief to the vascular system, reducing vascular tension. Applying this reasoning to other phenomena, we shall observe numerous illustrations. The excessive secretion of liquor amnii; the frequent copious discharges of water from the uterus; the occasional attacks of diarrhoea; the not unfrequent hæmorrhages from the mucous membranes, as of the lungs, the intestinal canal, the kidneys and bladder even—tell the same tale of discharges designed to relieve excessive vascular tension. If, as is most commonly the case, the overstrained circulating apparatus give way in the uterus, abortion may result; and we may, I am convinced, regard abortion in many cases as a conservative process, averting greater perils. As in the case of vomiting, so in abortion, we see a natural means for the relief of vascular tension and the moderation of nervous tension, which, unless so relieved, might issue in cerebral apoplexy, or some other catastrophe.

But the dangers at hand are not always cataclysmic. Other modes, in which high vascular tension evinces its influence, are manifested more slowly and gradually, yet sometimes swiftly. Such are seen in the behaviour of the glands. The thyroid gland sometimes enlarges notably, and a more or less marked degree of exophthalmos attends. The breasts sometimes pass from engorgement into inflammation and suppuration. But the most important effect is manifested in the kidney. This organ has to bear the strain of two influences, both acting in unaccustomed measure. There is the dynamic hydraulic pressure; there is the irritation of the ingredients brought to it for secretion. Under this double trial, the discriminating faculty of the kidney is apt to be impaired. It lets through albumen; it throws back urea and uric acid upon the circulation. And if this trial be long continued, structural changes are induced in the kidney, and probably in other organs, notably the liver, and in the whole circulating apparatus. The passing of the boundary of physiology is made; the precipitance into pathology is almost sudden. Still, the kidney, the heart, and the bloodvessels may recover their pristine

integrity ; all may be as sound as before, if we take off the arterial tension, if we lessen the irritating qualities of the blood in time. Here we touch upon one of the most interesting and agitating problems in medicine, now being contested by some of the most able physicians of the day : What are the factors, the essential conditions of Bright's disease ? Is the starting-point and the main seal of disease in the kidney ? Is it found in the central, or peripheral, arterial, and venous or capillary vessels ? Or is it to be sought in the blood ? One of the most striking features of pregnancy is the general peripheral development of the vascular system ; there is a fulness, a lingering of blood in the capillary vessels, and a development of the veins which amounts to phlebectasis, which in many cases is never wholly recovered from. This condition is often so marked that it constitutes one of the best tests in the diagnosis of early pregnancy.

I feel very confident that the careful study of the reactions of the kidney and the general vascular system, the nervous system and the blood, under the dominion of pregnancy, will go far to solve the mystery. Whatever the solution offered, it must be in harmony with this history. It must be consistent with the fact that albuminuria may be transitory, last for a time without any organic alteration of structure, and disappear, leaving no trace behind. A distinct experiment has been instituted and carried through, as if on purpose to illustrate the causes and conditions of albuminuria. I will not in this place do more than refer to the eclampsia, so often associated with albuminuria in pregnant women. I have dwelt upon the subject with some detail in my Lumleian Lectures, on the Convulsive Diseases of Women. Under no other circumstances can we see the phenomena of convulsion so clearly through origin, progress, and decline—through every phase of its history. We start with a healthy subject. Pregnancy is induced. Under the consequent exaltation of nerve and vascular tension, the proclivity to convulsions, we have seen, grows ; the twitchings of the limbs, the vomiting, the increased mobility of the cerebral centres, are indications of the exaggerated disposition to convulsions. Then there comes a *tertium quid*, which seems to be necessary to produce the outbreak of convulsion. This is found in the blood, which, carrying elements that ought to be excreted by the kidney or other emunctories, to the nervous centres, by some mode of irritation, excite the convulsion. We may trace a similar process in the albuminuria and convulsion that sometimes complicate scarlatina, and in other forms of acute albuminuria. But nowhere except in pregnant women can we observe all the stages of a pathological struggle so closely and completely, from the moment of departure from health to complete recovery.

Illustrations of the history of other forms of convulsions are numerous and instructive. Chorea, for example, must be studied through its relation to menstruation and pregnancy. In the great majority of cases of chorea in children which come under the physician, the convulsive disorder yields after a time. The return to



health, *quoad* the liability to convulsion at least, seems complete. And so it is unless we test the soundness of the recovery by pregnancy. Apply this test, and back comes the chorea, and that with an intensity unknown before, even issuing in insanity or death. Here, then, we see new illustrations of the fundamental conditions of exalted nerves and vascular tension belonging to pregnancy; we see how pregnancy becomes a test of physical soundness; we see that the study of chorea, if limited to the observation of ordinary cases, would lead to false conclusions; we discover that, even after apparent recovery, there must linger in the nervous centres some latent infirmity that, but for pregnancy, would have remained unsuspected, but perhaps important in its future influence under any conditions of the subject, but which is revived with unmistakable force under the trial of pregnancy. A like remarkable illustration is furnished by ague. The pertinacity of this disease is well known. We are accustomed to see marks of its abiding influence long after the fits have ceased, long after the patient has lost all consciousness of suffering. But here, as in the case of chorea, I have seen ague-fits reproduced years after, under the condition of pregnancy. We cannot fail, then, here to see that there lingers somewhere in the system some change, the stamp of the original disease; and we may fairly presume that this change is in the nervous centres. Perhaps the precise organic change may long baffle the skill of the microscopic analyst to detect; but there it is proved by anticipation to exist, as real a thing as the planet discovered by Adams and Leverrier before it was seen by mortal eye through the telescope.

This chapter in the history of chorea and ague leads, by natural process of reasoning, to the relation of pregnancy to hereditary or transmitted disease. I cannot do more than glance at syphilis, that terrible scourge that works with the more disastrous effects because it works unseen through generations. It is obvious that, if we would pick up many of the links in the often broken chain of the history of this disease, which has nevertheless been working continuously, silently producing pathological states of the most varied and diverse nature, we must not omit that most important epoch of its history: its relation to pregnancy. Nor can I do more than glance at the history of insanity. The appearance of insanity under the trial of pregnancy is a familiar fact. It is also established as a general fact, by obstetrical operations, that, in a considerable proportion of cases, there is a transmitted diathesis working through one or more generations. If we take into account, not alone overt insanity in ancestors, but other pathological manifestations, as chorea, other neuroses, tuberculosis, syphilis, we shall attain to a far more general and accurate law. We shall discover, by the observation of the reactions of the nervous system under the trial of pregnancy, new evidence of the transmission and perpetuation, it may be, of morbid peculiarities of structure of nutrition, which, under the ordinary conditions of life, would remain latent, undreamed of.



Reverting for a moment to the glandular system, let me call attention to the fact, that that most striking form of jaundice associated with acute yellow atrophy of the liver must be investigated through pregnancy, since it is under pregnancy that the greater number of cases occur. I think it more than probable that the light to be thrown upon this disease, and other forms of jaundice, will strengthen the theory that a chief factor must be sought in the disturbed action of the nervous system, aided by pre-existing or induced alterations in the blood. The influence of emotions upon glandular action is familiar; but it is during pregnancy, when the nervous system is in a peculiarly exaggerated state of excitation, that we may witness the most striking illustrations of this influence, and found conclusions which observations detached from the history of pregnancy would not justify.

I might here refer to glycosuria. Physiologists have long investigated this condition almost solely by aid of experiments upon animals, but here in pregnant women we often have experiments instituted under conditions equally, if not more, deserving consideration. Many women exhibit the phenomenon of sugar in the urine at every pregnancy; it disappears when the pregnancy is over. The subject calls for examination in connexion with the function of the breasts, as well as with the functions of the liver and kidney; and especially the action of the nervous system must be borne in mind.

I might, did time permit, dwell upon some of the conditions of the skin during pregnancy. I can only suggest the importance of observing these conditions in connexion with the fundamental nervous, vascular, and blood-changes. I cannot doubt that by this study we shall one day unravel the mystery of pigmentation, and who shall tell, when this mystery shall be unravelled, what light will not be thrown upon other problems in physiology and pathology? There are few phenomena so marvellous as the darkening of the skin in particular regions of the body under the influence of pregnancy. May it be associated in any way with changes in the suprarenal gland, and thus be a phase in the history of Addison's disease? That it is in some way dependent upon nerve-distribution and tension, I have seen unmistakable evidence.

Before leaving this topic, and sparing you many reflections connected with it, I cannot help referring to the light that the study of obstetrics throws upon thrombosis and embolism. It is not too much to say that pregnancy furnishes the most frequent and the most uncomplicated illustrations of this blood-change. Any speculation, any theory, of this process must embrace, and be in harmony with, the examples we see in pregnancy. It is well known that phlegmasia dolens most commonly occurs after labour, and other forms of thrombosis and embolia are equally rare during pregnancy. But cases do occur. Why, we naturally ask, does the blood show such special disposition to clot in the vessels quickly after labour?

Observation suggests a solution. The predisposition is that found in the increase of fibrine and other changes in the constitution of the blood. The fibrine is precipitable; something is wanted to precipitate it, and that something is at hand. It is found in the products of involution of the uterus, of decomposition of blood in the uterine sinuses, in short, in some form of septic matter which, entering the lymphatics and veins, precipitates the fibrine. The suddenness with which the phenomena are developed points to this direct chemical action. Now, during pregnancy this source of septic invasion can rarely exist. Hence, although the blood is eminently coagulable, for want of the coagulating factor, it preserves its fluidity. And the exceptions, I suspect, are more apparent than real. Thus in one case which I have recently seen in St. George's Hospital, of a young woman four months pregnant, in whom phlegmasia dolens of the legs supervened, I found that the embryo was dead, and that a process of separation of the ovum had set in. But there is another coagulating power apart from septicæmia, that is found in nervous action, in the influence of emotion. This influence is nowhere so remarkably shown as in pregnancy. I have seen violent emotion followed almost instantly by thrombosis in the iliac and femoral arteries, issuing in gangrene.

Here we approach the wide subject of septicæmia, puerperal fever, and we might trace endless instructive relations between these states and the various blood-poisonings with which surgeons are familiar at the bedside, although their intimate history is still imperfectly known. This history will always remain obscure until studied by the aid of obstetric observation; for labour is still the grandest of all surgical operations. Why do I weary you with these speculations? I do it to point my theme. I do it because they are practically neglected. Search our medical literature; you will hardly find, even in our special obstetric works, evidence of due appreciation of them in their togetherness; and in our standard works on general pathology there is barely a hint, a suspicion of the place they challenge in the science of medicine. Medicine and surgery are studied far too specially, in isolated parts. We hear sometimes of "pure" physicians and "pure" surgeons; and I presume, by implication, that other practitioners are "impure." But if it be shown, as I think I have at least partly done, that a philosophical comprehensive science of medicine or surgery cannot be built up without an earnest study of obstetrics, then it will appear that the word "pure" must change its accepted significance. Is it unfair to suggest, if only under the justification of retort, that a "pure physician" is one who is purely ignorant of much that is essential to the right intelligence of his subject? We hear a good deal about specialists. Shall I venture upon a definition of the specialist? The specialist in medicine is one who, limiting his attention to one or more detached parts of his art, specially neglects other parts which are essential to the making of the true physician. Tried by this test, who is the specialist?

Is it the obstetric practitioner, who embraces within his range of study all the knowledge he can collect from every source? Is it not rather the pure physician or pure surgeon, who carefully shuns all knowledge of obstetrics, and shuts his eyes to the light which this study can throw upon the subjects he more especially professes to understand?

I may fairly sum up the scientific head of my theme with this proposition : *As pregnancy is the test of soundness in the individual, it may be of all her blood-relations too, so is pregnancy often a crucial test of the soundness of pathological doctrines.*

Upon this basis let me pass to the political corollary. If the scientific study of obstetrics has been neglected, it will not seem strange that the position of those who practise obstetrics should be ambiguous and unsatisfactory. Men in authority can hardly be expected to recognise merits of which they are ignorant. There is a College of Physicians and a College of Surgeons; there is no College of Obstetrists. I do not think it desirable that there should be. But this is no reason for being left out in the cold. It is to the interest of the medical corporations no less than of the community that obstetric medicine should be fairly represented. Men who professedly, almost boastfully, disclaim all knowledge of obstetrics can hardly be best fitted to define the limits of obstetric education, to decide upon the amount of knowledge or the degree of ignorance upon which candidates for diplomas may be permitted to practise. Nor is it reasonable to expect that such men will, in these matters, command the confidence of the profession or of the public. Obstetric practitioners stand between medicine and surgery, embracing both. But, strangely enough, it is the College of Physicians alone that gives them an honourable place.

In the College of Surgeons, the spirit of Sir Anthony Carlisle still seems to rule. Sir Anthony said that the midwifery of the country might be undertaken by the wives of the general practitioners. The councils of the College during this time were making surgeons who went forth over the world authorised to practise every branch of medicine and surgery, and of whose knowledge or ignorance of medicine and obstetric surgery they took no heed. Young men, under the authority of the College, assumed the responsibility of unlimited professional skill on the most limited professional knowledge. The councils trusted, if they thought the matter worthy of attention, that their members had, by bringing certificates of having attended a few months' hospital practice, a few lectures, and a few cases, given sufficient evidence of competency in medicine and surgery. But they might have known, as every teacher and examiner knows too well, that a large proportion of candidates endowed with "practical minds" get up what "pays" at the examining boards, and no more. What the examiner neglected as superfluous, candidates would hardly take the trouble to acquire. Few things, in my experience as an examiner, have given me more pain than to be called upon to



examine men older than myself, who had been many years settled in practice, holding honourable positions, some distinguished surgeons in the army, of good repute, enjoying public and professional esteem. That such men should, at an advanced period of their career, be suddenly called upon to prove their fitness to do what they had long been engaged in doing; that such men should, at the busiest and most anxious periods of their lives, be suddenly challenged, be compelled to stake reputation, all they had achieved, on the hazard of an examination,—is surely a cruel wrong, and a just reproach to our political constitution. It seems impossible to fix the responsibility for this wrong elsewhere than upon the College of Surgeons. The University of London, from the beginning, made obstetrics an integral and equal part of the examinations for its degrees. So does the College of Physicians in the case of its licence. Both these bodies are continually holding before the College of Surgeons a practical example of what is right and feasible. And the College of Physicians is doing the further public service of correcting, to a certain extent, the evil wrought by the College of Surgeons. Men who have for years been practising on the diploma of the College of Surgeons are constantly presenting themselves at the College of Physicians, anxious to undergo the perils of a new examination. To this they are driven by the pressure of public opinion, by the suggestions, more or less disinterested, of rival practitioners, by the disqualification for certain public appointments, and by their own sense of duty, which all concur in declaring that their surgical diploma is an imperfect guarantee of fitness to practise, an inadequate claim to public confidence.

Herein lies the new strength of the College of Physicians, the explanation why, within a few years, it has made more than eleven hundred licentiates; why the number of candidates is steadily increasing.

Why, in the face of all this evidence of the evil they are working, does the College of Surgeons still persist in a course condemned alike by professional and public opinion? The College contends, I believe, that its mission is to supply surgeons; and that it is for other bodies to make physicians. The plea is plausible, but vitiated by fatal fallacies. If the argument I have set forth be sound, it is impossible to make a good surgeon without training him in medicine and obstetrics. And granting that the College diploma guarantees competent skill in surgery, the council very well knows that this diploma, being registered, confers legal right to practise in all departments; that is, far beyond the actual and moral scope of the diploma.

And even at the present day things have not much mended. A few years ago, the Council of the College of Surgeons, under a by-law, appointed two examiners in medicine. They chose two physicians of conspicuous merit—men able and anxious to give due prominence to medicine, and to improve the standard of the diploma.



But I do not think those physicians will affirm that the powers entrusted to them were sufficient to insure a satisfactory degree of proficiency in medical knowledge. It was better than nothing ; but it was very little.

But, having recognised the truth that a little medicine was a desirable accomplishment for the surgeon, why did it not, at the same time, occur to the College that a little obstetric knowledge might be useful? The same power which enabled them to appoint examiners in medicine would enable them to attach examiners in obstetrics, and to make obstetrics an integral part of the examination for the member's diploma. But, with stupendous inconsistency, they stopped short in a course of reform which, fairly carried out, would have redeemed the College from the reproach it must continue to bear, that it licenses men to practise all departments of medicine, whilst it tests proficiency only in part.

The answer to this, of course, is, that the College had instituted a special separate board of examiners in obstetrics, to which members of the College and others might, if they pleased, go to supplement their imperfect diplomas by a special licence. Now, the institution of this board, useful as its design was, suggests some reflections. Why was it necessary to create it? Why should a College of Surgeons, a College which is never tired of telling the world that its function is to make surgeons proper, create a special board of examiners in obstetrics? Well, was it a confession of laches on their part, a means of repairing the fault of omission of which they had been guilty by issuing licences to practise beyond the scope of their ordinary diplomas? It undoubtedly enabled many men who had gone into practice on the surgical diploma to come back and supplement this diploma by a special obstetric licence. If this were a right thing to do—right to correct the original defect in the surgical diploma—why should they all the time go on perpetuating this original error? Would it not have been a far more simple and effectual plan to enable those members of the College who had gone into practice with the imperfect diploma to come up for this supplementary obstetric licence, and to make obstetrics an integral part, like medicine, of the general examination for the member's diploma? Why go on repeating *ad infinitum* the error which made the special obstetric licence necessary? Why inflict upon their members the cruelty of compelling them to submit to a new examination many years, perhaps, after they had been established in practice?—for cruelty it undoubtedly is. Well, but the College is waiting, waiting for the realisation of a scheme—the Conjoint Scheme. Suspended on this doubtful scheme, it still, acknowledging the right, continues to do the wrong. It still grants its imperfect diplomas ; it still licenses to practise what it ignores ; it still inflicts a double injury upon the public and upon its members. And in this pernicious action it stands alone. Why should it not, whilst waiting for the accomplishment of the Conjoint Scheme, reciprocate the action of

the College of Physicians? This body will not issue its licence except to candidates who shall either have passed the examiners in surgery who form part of its own board, or who shall have produced the diploma of the College of Surgeons, or other satisfactory evidence of possessing surgical knowledge. Why should not the College of Surgeons, in like manner, call for the licence of the sister College as evidence of competent knowledge in medicine and obstetrics, and thus put an end to a gross professional scandal? If the College of Surgeons will not do this, there is another alternative. Let the diploma which it grants to members state plainly in terms the fact that it guarantees no knowledge of anything but a modicum of surgery; that it is only a fragmentary diploma.

The College of Surgeons will not escape from the dilemma; it will not do its duty by the revival of the lame expedient of a separate board of examiners in obstetrics. The time has gone by for bit-by-bit qualifications. The surgical fragment cannot be adequately supplemented by an obstetric fragment. Nor will the College be permitted to issue the obstetric fragment alone. Common sense has been outraged by this proposition. The voice of the profession has unmistakably condemned it.

Accustomed to the fragmentary study and practice of medicine, it is not altogether surprising that, in accordance with its traditions, it should treat obstetrics as it had long treated surgery; that is, as a distinct limb, capable of being disjointed from the general body of medicine. All this muddle and confusion into which the College has drifted spring from this fundamental error. The political blunder is the natural fruit of the scientific error. It is only in this way that we can understand the strange perversity which led the Council of the College of Surgeons to attempt to create a new order of medical beings, male and female, specially licensed to practise midwifery and to treat the diseases of women. Those who could thus declare that a little bit of medical knowledge was good enough for women, that is, good enough for medical women to possess, and good enough for the women who would be their patients, might be expected to do almost anything; but they certainly touched the climax of *naïveté* when they called upon men who taught and represented obstetric science to be the instruments of their own degradation—of this wrong to womankind.

The pertinacious attack waged upon the University of London calls for an observation. The attempt to turn Russell Gurney's Act into a weapon of offence is well known. The rashness of lawyers, by education and training generally innocent of science, and too often by instinct the enemies of science, of pedagogues and their fledgelings, of anti-vivisectionists, the advocates of the rights of women, of the opponents of the Contagious Diseases Acts, of homœopaths, mesmerists, *et hoc genus omne*, may be understood, if not forgiven; but that this restless band of crotchet-mongers should be supported, in this mischievous attack upon the constitution of

the University of London, by members of the Council of the College of Surgeons appointed to seats in the Senate by the Crown, is what the medical graduates naturally resent. It is a fundamental principle of the University that its medical degrees imply full and equal knowledge in all departments, in this respect differing entirely from the fragmentary diplomas of the College of Surgeons. It was a grievous wrong to import this worn-out tradition of the College into the University. The University was founded, it may be said, for the express purpose of protesting, by example and precept, against the imperfect schemes of education and qualification which had hitherto ruled in the schools and corporate bodies. In any way to recede from this principle is to attack the very spirit and life of the University. The governing principle is unity of standard, and that the highest. Medicine is one ; all parts concurring to form a perfect whole. We have no place for specialism. We recognise no detached qualifications or degrees in medicine. We repudiate utterly the proposition that there is one standard which it is necessary to attain to qualify for the treatment of the diseases of men ; and another, a lower, standard to qualify for the treatment of diseases of women. The new doctrine, that there is a special, an inferior, kind of medical knowledge that is good enough to apply to the care of women is the most transcendent of all medical heresies, the most flagrant wrong, the grossest insult ever inflicted on woman. And all this under the plea of doing justice to woman ! Do the rights of women consist in giving way to the clamour of a score of strong-minded persons ; in arming them with the legal right to exercise skill which *ex necessitate rei* must be of low order, upon womankind in general ? Have the mass of women no right ? Is it not their dearest right to be protected by man ? Even against their own sex ?

I am not going to discuss the vexed question of the relative intellectual powers of man and woman, and the dependent question of the absolute fitness of women for the various professions. I will not question that the feminine intellect is equal to the duties of the pulpit or the bar. *Crede experto*. There are always lawyers and parsons who declare that it is. But as to medicine, the discussion is superfluous. It is conceded, even by the most strenuous medical advocates for medical women, that the attainments of women must be inferior. It is admitted that there are things that men cannot teach women. Justly or unjustly, the present order of things forbids the possibility of opening equal means of professional instruction to men and women. And so long will this continue as men and women retain the physical and mental attributes which have distinguished the sexes from the time of the Creation.

Accordingly, in the College of Surgeons, it was proposed to make a special medical order of persons to be put on the *Register*, after a reduced or diluted examination *ad hoc*, to be licensed to practise on women. Accordingly, the female-party in the University contemplate modifying the curriculum and examination for women-



candidates. Now, is not this to give up the whole argument? If we recognise the great principles that medicine is one and indivisible; that our physiology, our pathology, rule alike over the organisation of men, women, and children; then it follows inexorably that the attempt to split up medicine into parts, one of which can be safely practised by women upon women, is doomed to failure.

The College of Surgeons is actually without examiners in obstetrics, either as forming a supplementary board, or as an integral part of the general board; and it appears, from the report of its late President, that it is now considering what measures to adopt in relation to this question. "At an extraordinary meeting, it was resolved that the Council of the College of Surgeons, regarding women as not eligible to become members or fellows of the College, is therefore not prepared to admit them to be examined for these qualifications, whether at the examinations as now conducted, or with the proposed machinery of joint-examinations. But it was also resolved, that the Council, if legally authorised, would be willing to take part in special joint arrangements under which women should be able to acquire the registrable titles for practice; and the Council authorised the President and Vice-President to take such steps as they may find expedient, in order to promote the amendment of the law which may be necessary for this purpose. The President and Vice-President are now engaged in the consideration of the best mode of giving effect to the decisions of the Council in this matter."

There this matter stands. Let us hope that the College, by the voice of its fellows and members, may be able to ratify the decision at which its Council shall arrive.

I am tempted to cite the most recent illustration of the mistaken spirit that governs some of our professional bodies. The Council of the Pathological Society of London has issued a circular to its members, announcing that an investigation has been undertaken by the Society relating to the nature, causes, and prevention of the infectious diseases known as pyæmia, septicæmia, purulent infection, and puerperal fever. The inquiry has been entrusted to a committee, consisting, first, of four members of the Society specially qualified to engage in the necessary anatomical and chemical investigations; secondly, of a number of surgeons and physicians representing the hospitals of the metropolis, who have undertaken to co-operate with the first body in organising and carrying out the inquiry. Now, in this work of wide-reaching inquiry it has not been thought necessary to associate a single member who practises or who has any practical acquaintance with obstetrics. Here is an inquiry into the nature and causes of puerperal fever, without the aid of those who almost exclusively see it, study it, and treat it! To play Hamlet, omitting Hamlet, is nothing to this! Those who drew up this scheme must believe in the spontaneous generation of knowledge; in *Lucina sine concubitu*.



Now, I think it is time, more than time, to sum up my political argument, and conclude a discourse undertaken under severe pressure, and therefore loaded with more faults than might otherwise have been expected. The political error which mars the usefulness of some of our medical institutions flows from the scientific fault: a want of due appreciation of the place which obstetric science and practice should hold.

I am sure that, in Manchester at least, that art will be vindicated by which White, Hull, Kinder Wood, Robertson, and Radford, have added lustre to their city, splendid in Arts, in Politics, in Literature, and in Science which governs all.

*(To be continued.)*

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## *Abstracts of Societies' Proceedings.*

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### OBSTETRICAL SOCIETY OF EDINBURGH.

*Meeting, 28th March, 1877.*

Professor SIMPSON exhibited an acardiac foetus, regarding which he proposed to give a full account, after dissection, at a future meeting.

#### *Note on the Use of the Stethoscope in Obstetrics.*

By JAMES CUMMING, M.D.

Mrs. K., aged forty-one, Bonnington, consulted me last year at the New Town Dispensary, for a mitral systolic murmur of the heart. She had suffered several years ago from a severe attack of rheumatism. On the 18th of last October (1876) she again consulted me at the Dispensary, stating she was afraid she was suffering from an abdominal tumour which had been steadily increasing in dimensions during the past few weeks. I suggested pregnancy, but she denied the possibility of this, having experienced none of those symptoms which had accompanied all her previous pregnancies (morning sickness, foetal movements usually felt about the seventeenth week, &c.), and gave me the following brief history:—Has had six children. At her last confinement, which occurred in March, 1868, was attended by a midwife, when she had two severe floodings. Was last unwell towards the end of April (1876). I thought, before proceeding to make a thorough examination, we might see what information could be gained from the use of the stethoscope. Accordingly, having applied it to the abdomen, between the umbilicus and the right anterior superior spine of the ilium, I heard a loud blowing bruit, which, however, was not confined to this spot, but was audible all over the abdomen. On the patient assuming the prone posture, this sound was not in the slightest degree diminished.

With regard to the uterine souffle, I may mention here in parenthesis, that on glancing over one of the French medical journals recently,\* I observed that at a meeting of the Académie de Médecine, held on the 6th of last June (1876), M. Bouillaud still adhered to the *abdominal* theory regarding the cause of the souffle, promulgated by him in the year 1835†—viz., that it is due to pressure of the gravid uterus on the large arterial vessels situated posteriorly (aorta and iliac arteries). The younger Glénard of Lyons, on the other hand, advocated the *théorie épigastrique* (that it is caused by pressure on the epigastric artery).

At a meeting of this scientific society, held on the 27th of the same month, M. Depaul replied to the above statements, mentioning that the theory of Glénard is by no means a new one, as it exists in a work published by Kiwisch in 1849. However, in a communication addressed to Depaul, Glénard states that he believes the true seat of the souffle to be in a neighbouring artery of the epigastric, an anastomosing branch between the internal iliac and the ovarian, which he proposes to call the puerperal artery.

Let us consider for a moment the arterial circulation here. The epigastric artery, a small branch of the external iliac given off a few lines above Poupart's ligament, ascends upwards and inwards between the peritoneum and the transversalis fascia, enters the sheath of the rectus abdominis, supplies that muscle, and anastomoses with the superior branch of the internal mammary and inferior intercostal arteries. The ovarian, tiny vessels arising from the anterior part of the aorta, a little below the renal arteries, are distributed to the ovaries and uterus. Would pressure on those vessels account for the uterine souffle? It seems to us that no comments are required on this untenable theory. Depaul, although not denying the possibility of a bruit in the epigastric artery, argues that it cannot be compared to the bruit de souffle, which is due to the arteries ramifying in the walls of the uterus, so much developed during pregnancy. Here are his own words:—"Ni par la théorie du souffle épigastrique, ni par celle de M. Bouillaud qui le place dans les grosses artères iliaques, on ne peut expliquer comment ce bruit peut être entendu dès la fin du 3<sup>e</sup> mois de la grossesse alors que l'utérus n'a pas encore dépassé le détroit supérieur et ne peut, par conséquent, comprimer ni l'artère épigastrique, ni l'iliaque interne. Du reste, ce bruit de souffle ne s'entend pas seulement chez les femmes encientes, mais plusieurs heures et même plusieurs jours après l'accouchement." Rapin of Lausanne also supports the uterine theory. This is the explanation generally accepted, and hence we name it the *uterine* souffle.

To continue my case. Having heard what is only a symptom, I resolved to search for the only true sign of pregnancy, the foetal heart. On planting the stethoscope in the medial line of the abdomen,

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\* "Archives générales de médecine."

† "Traité clinique de maladies du cœur."

about an inch below the umbilicus, and using some pressure, a pulsation was heard loud and distinct, beating at 130 per minute, while the patient's pulse was under 90. I also thought I detected movements of the foetus. One of my pupils also made an auscultatory examination and corroborated me, so we were able, much to her relief, to assure her that the tumour was that of pregnancy. This turned out to be about the fifth and a half month of utero-gestation.

Now, we know that the foetal heart is audible at a considerably earlier period than this,\* and I feel confident that, had we had the opportunity of making an examination, it would have proved so in this case, judging from the character of the pulsations (loud, distinct, and readily detected).

She asked me to attend her at her confinement, which I consented to do, thinking it might turn out to be a case of some interest.

On the 30th of last January, at 1 A.M., I received a message to see her, and on examination found the os uteri about the size of half-a-crown. She had been in labour some hours, but the pains were not strong. At 2 A.M., finding that but little progress had been made, and as she felt inclined to sleep, I left her.

On returning at 9.30 A.M. the os was fully dilated, but the head high up in the pelvis. She complained of being much exhausted, and although the pains were pretty frequent, they were short and unsatisfactory; and at 10.30, finding no advance of the head, I resolved to apply the long forceps.

The bowels and bladder having been shortly before relieved, and the position of the head (a first) ascertained, with the assistance of a neighbour who acted as nurse, I placed the patient in the usual position, on her left side, administered chloroform (with considerable reluctance on my part, and only at her urgent request), and proceeded to apply the instruments. It is recommended in text-books to introduce two or three fingers of one hand, but in this case it was simply impossible, from the extreme rigidity of the parts; so, trusting mainly to the forefinger of my left hand as a guide, I introduced the lower blade in a direction corresponding to the left oblique diameter of the pelvis, taking care to keep it close to the child's head. Then feeling with my right forefinger, holding the upper blade in my left hand, I introduced it in front of the lower one, and raising it slowly and gently, it glided over the right side of the head, when the blades readily locked. The forceps were thus fixed in a direction corresponding to the left sacro-iliac synchondrosis and the right foramen ovale. I much felt the want of skilled assistance. Considerable traction in the axes of the passages was required, and when the head was born the umbilical cord was found to be tightly bound round the neck. This was at once freed, but remembering the old rule, not to cause a sudden evacuation of the uterus, more especially if from the previous history of the case we have reason to apprehend flooding, I merely placed

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\* "Edinburgh Medical Journal," October, 1876, p. 322.

my hand on the fundus uteri, and, exerting a moderate amount of pressure, followed the descent of the child till it was born a few minutes later. It was a male, apparently of average weight.\* When the patient came out of the chloroform (which she did almost immediately after the birth) and was told that her child was alive and well, she calmly informed me that she was going to flood. The uterus was contracting fairly under friction; but thinking the application of cold might hasten the process, I went to the window-sill and taking a handful of snow, added it to a basin half filled with cold water, and, dipping my hands for a few seconds in this freezing mixture, applied one over the uterus externally, and with the other introduced internally, removed a few small clots. The patient gave a gasp. The uterus soon contracted and felt hard and firm under the hand, like a cricket-ball. She made a rapid and excellent recovery.

Professor SIMPSON thought Dr. Cumming was correct in upholding the view of those observers who maintained that the uterine soufflé originated in the bloodvessels of the uterus; but at what point in the course of the vessels the sound was produced, he believed was still undetermined, or whether, as Cazeaux thought, it might be due to the condition of the blood.

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Dr. WILSON read "Notes of a Case of Extra-Uterine Pregnancy."

Professor SIMPSON regarded the case as an interesting addition to our record of cases of this description.

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Dr. CUTHILL read a paper on "A Case of Patent Foramen Ovale, occurring in Live Birth, in which Respiration failed to be established, with Preparation of the Heart."

A short discussion, in which the President, Dr. Matthews Duncan, and several of the Fellows took part, then followed Dr. Cuthill's paper, after which—

Professor SIMPSON read for Dr. PATERSON, Bridge of Allan, "Notes of a Case of Anencephalous Foetus born Co-twin with a Healthy Child, with Preparation." Mrs. S., married, aged thirty-two, strong and healthy, has had two children. Upon her third confinement she informed me that her labour had come on two months sooner than she expected. On the 16th of February I was called to attend her, and, upon examination, found the os uteri fully dilated and the vagina filled with the membranes. Labour-pains not frequent, and weak. I ruptured the membranes, and the quantity of liquor amnii was very excessive. I collected a large chamberpot quite full, and there must have been lost in the bed an equal quantity. On further examination I was perfectly puzzled as to the nature of the presentation. Shortly, however, I found a small hand presenting. I then introduced my hand with a view to turning, and found a small

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\* "Edinburgh Medical Journal," November, 1875, p. 421.



deformed child, which was easily extracted. When born it was in a state of perfect rigidity. On placing my hand on the abdomen of the mother, I found another child in utero, which was born quite naturally one hour later, and evidently a seven-months' child. Both children were females; and it is a singular fact that Mrs. S.'s mother was also delivered of twin daughters at her third confinement. Mrs. S. states that during her pregnancy she felt quite well; but about six weeks before her confinement she had had a fall, but knows of no other circumstance likely to have produced premature labour. During my long experience this is the only anencephalous case I have met with.

Professor SIMPSON observed that the foetus presented the usual characteristics. It was interesting that it had been born co-twin with a healthy child. The bag containing the anencephalous child contained great excess of liquor amnii. He referred to a paper he had formerly communicated to the Society which showed the frequency of hydramnios in these cases.

Dr. JAMIESON met in 1870 with two anencephalous cases in one week. In one case there was a large quantity of liquor amnii. The patient made a slow recovery, suffering from phlegmasia dolens. In the second case there was no excess of liquor amnii. In both cases the viscera protruded on account of deficiency of the anterior abdominal wall.

Dr. BRUCE had met with anencephalous cases, but never in twins.

Dr. WILSON had also met with such cases. He referred to two of these. In one, there was great excess of liquor amnii; in the other, the mother had previously had a child with hare-lip.

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### *Notes of a Case of Labour Complicated with Emphysema.*

By E. LAW, M.R.C.S.

(Communicated by the President.)

A. M., aged twenty-six, primipara, a strong healthy woman, was admitted into hospital at 4 A.M., 23rd February, 1877. On examination immediately after, I found the os somewhat larger than half-a-crown, the membranes ruptured, the child's head in the first position of Nægele. She states that the labour had commenced about 11 o'clock the previous evening, and that the waters had broke about 1 o'clock. The pains were regular, and the second stage commenced towards 7 o'clock; all proceeded well for some time. At 12 o'clock the head was almost at the outlet, but had not rotated; it now made no advance, although the pains were very strong, and the bearing down and straining most severe. The caput succedaneum gradually increased and became very large. On examination at 3 o'clock I found the head had rotated and made some progress. Dr. Ziegler, who had been summoned, arrived; and as the head was now making progress during each of the pains, which were not nearly so severe, he did not interfere; the labour

terminating satisfactorily a little before 4 o'clock. Child, female, healthy; weight, 7 lb. 6 oz.; length, 20 inches. Patient's strength good; made no complaints of anything wrong. On making my evening visit shortly before 8 o'clock, I found the patient complaining of an uncomfortable sensation about the throat, more particularly on swallowing. On examination with finger and spatula, could ascertain nothing to cause annoyance; but, upon feeling externally, found a puffy swelling on the right side of neck, extending upwards to the ramus of the jaw, and downwards over the clavicle to the thorax, terminating on the right side about the posterior axillary line, and being gradually lost on the left in front, not reaching the anterior axillary line on that side. On pressure, it gave the characteristic crackling of subcutaneous emphysema, being most marked in the supra- and infra-clavicular regions on the right side. There was no pneumothorax or dyspnœa. The only effect upon patient was what she called "a wrenched sensation about her throat." This, it appears, had come on about half an hour previously, whilst taking a drink of tea. Previous to this, the patient had been easy and comfortable, having slept a little since her delivery. The disagreeable sensation passed away in four days; and, at the ninth day, no trace of emphysema could be found. Patient made excellent recovery. Pulse and temperature always normal.

Professor SIMPSON thought the case remarkable, inasmuch as nothing had apparently occurred during labour to cause the emphysema; and the escape of air into the cellular tissue seemed to have taken place subsequently to the labour, as it was not till some time after its termination that the emphysema was observed.

Dr. UNDERHILL remarked that the case differed from one recently communicated to the Society by him, and in which great dyspnoea came on during the second stage of labour.

*Meeting, Wednesday, April 11, 1877.*

Professor SIMPSON exhibited a mucous polypus which had been attached within the canal of the cervix, and had given rise to much hæmorrhage.

Dr. ANGUS MACDONALD then read Part I. of a paper on "The Bearing of Chronic Disease of the Heart on Pregnancy and Parturition," which is now being published in this journal. Discussion of the subject adjourned till conclusion of paper.

*Case of Spontaneous Version after the Rupture of the Membranes in a Primipara.*

By Dr. C. E. UNDERHILL.

The following case is interesting as being a good example of an uncommon event—namely, the change in the position of a fœtus

from a head presentation to a breech presentation after the membranes are ruptured, and when a considerable part of the waters have drained away.

Mrs. M., primipara, a healthy, well-made young woman, aged about twenty-five, had arrived at the middle of the ninth month of pregnancy. She was not very large. On the evening of the 31st May, 1875, when downstairs in a dark room she gave her abdomen a slight blow against the edge of an open door; this caused little pain or inconvenience at the time, but she was awakened about two o'clock in the morning by finding herself very wet and uncomfortable—"just swimming in water," as she said. This she supposed was urine dribbling away without her being able to control it. When I saw her an hour later, I found the os sufficiently open to admit one finger, the cervix about an inch and a half in length, and the uterus acutely antelected, the membranes ruptured and water coming away; the head was presenting in the pelvis, and lying in the first position of Nægele; there was no difficulty in making out its position. The child was alive. She noticed that the water came away more freely when she was in the recumbent posture than when she was standing up. No pains had at this time been felt. She was ordered to keep very quiet and lie down. The pains began slightly in the course of the day, but did not come on with any severity until the evening of the next day, 2nd June. In the course of that afternoon the nurse noticed some meconium coming away, and on examination found a breech presenting. I was not sent for until 9 p.m., when I found the child had been born half an hour, dead, and coming with the breech first. The nurse told me that the head had been delayed at the perineum for a considerable time after the birth of the body. The child, a female, was of medium size (not weighed), and exceedingly pallid, but otherwise appeared healthy—the lips were black, and the labia minora uncovered. The mother made a very good and rapid recovery, and soon became pregnant again without any appearance of the menses. She was confined at the full time of a healthy child, in the middle of June, last year.

There are two or three points worthy of short notice in this case. First, the uterus was acutely antelected; that is, the fundus was of course directed forwards, and so also was the cervix, its cavity being very nearly in the same line as the vagina. Some authorities—Graily Hewitt, for instance—look upon this condition as a cause of the vomiting of pregnancy, but Mrs. M. was entirely free from vomiting or even nausea, in both the first and second pregnancies. Secondly, the cervix was between an inch and an inch and a half in length, so that the taking up of the cervix into the cavity of the body, preparatory to the first stage of labour, had not yet occurred, and that within a fortnight of the full time. Thirdly, there was no menstruation between the first confinement and the second. This circumstance is not very common, but there are plenty of recorded instances—these, however, most frequently relate to women who have continued

to nurse their children until the occurrence of the second pregnancy has caused the milk to fail. Mrs. M. had no opportunity of nursing, and the milk gave her little trouble.

The change in position of the child—that is, the spontaneous version, is, however, the most unusual feature in the case. That changes of this kind take place frequently in the last months of pregnancy is now well known, from the observations of Heyerdahl, Valenta, Schultze, Høening, and others; and it has been shown that the more frequent the examinations made, the more changes are found. But these changes decrease rapidly in frequency the nearer we approach to the end of pregnancy, and are far less frequent in primiparæ than in multiparæ. Schultze found no case of complete version in a primipara within the last three weeks; Høening, who observes that the very few versions that occurred in the primiparæ he examined within the last six weeks, were almost all in cases with contracted pelvis, met with no instance of complete version in a primipara at a later period than seven days before labour, and only two such within a fortnight. His investigations, it is true, did not extend over a very large series of women, but the number of examinations made was very considerable, averaging more than twenty in each case. Among his 53 primiparæ, 19 showed no change at all; while in 34 there were 15 complete versions and 38 partial versions—*i.e.*, from head or breech to shoulder, and *vice versa*, besides 206 changes from one position of the head or breech to another of the same part. In one of his primiparæ complete version took place four times within the last four weeks of pregnancy. He points out also that head presentations are much more stable than breech presentations, especially among primiparæ, that is to say, that the change from breech to head is much more frequent than from head to breech. In the day before birth there was no change of position of any kind among his primiparæ, and only one among his thirty-four multiparæ.

My case appears to be worthy of record, in that the change, one from head to breech, took place in a primipara, in a well-formed pelvis, within forty hours of the birth, and after evacuation, perhaps only partial, of the waters; it is to be borne in mind that the child was at least a fortnight premature.

I may add that a case in some respects similar to mine has been recorded very recently by Dr. Cordes, of Geneva.\* His patient, who was a multipara, aged forty, in her sixth pregnancy, had arrived at full time. When first examined, 16th April, 1876, the neck was found nearly taken up, high up and behind; the belly was pendulous, and the abdominal walls very thin; the breech was made out to present by external manipulation and auscultation; the pains did not come on, and labour was delayed until 24th April, when, at 9 o'clock A.M., the left ischiatic tuberosity was felt presenting, membranes unruptured; at 11.15 the neck was higher, and no presenting part could

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\* “*Annales de Gynécologie*,” July, 1876, p. 41.



be felt ; at 5.15 the head was felt in the right-occipito-anterior position. The child was born alive at 10 o'clock—the membranes had remained entire until after 8 o'clock, and were said to contain a large quantity of liquor amnii. Here the spontaneous version took place during labour, but the patient was a multipara, with pendulous belly and unruptured membranes, and the change that took place was the more common one, from the breech to the head presentation.

Murphy\* records a somewhat similar observation, in which the breech replaced the head. It was observed by Dr. Johnson, of Stoke-upon-Trent. The patient, a primipara, was in labour when first examined, the os dilated to about the size of a crown-piece, head presenting, in right-occipito-posterior position ; an hour later, when the membranes ruptured, a breech was found presenting. The child had a swelling on the upper part of the left parietal bone ; this appears to have been a cephalhæmatoma.

Professor SIMPSON thought it was of importance to record the history of all such cases. The only difficulty in this case was to decide if labour had really begun, and the change in the presentation thus really fell under the category of spontaneous versions during parturition, or whether the change of position was due to spontaneous movement of the child, such as, commonly enough in multiparæ at least, took place up to the period of labour. It was interesting to observe that the change had taken place from head to breech, the reverse of what most frequently happened.

## Obstetric Summary.

### *A Case of Extra-Uterine Fœtation.*

In the *Archives de Tocologie* for June, 1877, Dr. Sarret relates the following case of (supposed) extra-uterine fœtation. The patient was twenty-seven years old. At the age of twenty-one she had married her first cousin. The following year (1872) she was delivered of an idiot boy, who, at the age of three, died from acute meningitis, having never been able to speak or walk. Menstruation had been regular up to February, 1877, and the last normal period took place on the first days of that month. On the 20th of the same month uterine hæmorrhage recurred. Dr. Sarret was called in early in March, the hæmorrhage still continuing, but the patient not otherwise feeling herself ill. He prescribed rest, ergotine, and astringent injections. On the 21st hæmorrhage still continued, and upon vaginal examination the cervix was found pushed forward, and an indolent tumour behind it, which Dr. Sarret took for the retroflexed fundus. The presence of this tumour caused a constant rectal tenesmus. By the 27th there seemed to be some enlargement of the abdomen, and the breasts appeared to be a little swollen ; it was also ascertained that the

\* "Dublin Med. Journal," May, 1863, p. 471.

patient had for the past month had occasional nausea, and nervous symptoms resembling those of early pregnancy. Dr. Sarret then began to suspect an extra-uterine foetation. Hæmorrhage still continued from this time, and the abdomen continued to enlarge. Very obstinate constipation also set in, and enemata proved to be of no avail.

On April 16th the patient was seen in consultation by Dr. Depaul. The uterus was then pushed forward so as to form a small tumour detected on the right side by external palpation; but Dr. Depaul failed to introduce the sound. He found that some milky fluid could be pressed from the breasts, and coincided in the diagnosis of an extra-uterine foetation of about two months' standing. He recommended complete rest, and a purely expectant treatment. About the twenty-fourth and twenty-fifth hypogastric pain and tenderness occurred, and the pulse became accelerated to 107.

On the 26th some glairy fluid was discharged from the rectum, and the faces began to be coloured by blood. The tumour was found to have increased, and the cervix, being pressed close against the pubes, could scarcely be reached. By rectal touch an aperture could be reached in the anterior wall, which seemed to be a communication between the tumour and the intestine. On the 28th Dr. Depaul again saw the patient. He considered that the tumour would probably be evacuated by the aperture into the rectum, and recommended a continuance of expectant treatment. The discharge from the rectum continued, but no foreign body could be discovered in it, except some fibrinous masses. By May 3rd the retro-uterine tumour had become smaller and softer, the abdomen and breasts had diminished; the aperture in the rectum still continued open. By the 8th the tumour had almost completely disappeared, and the uterus had its ordinary mobility. There still remained, however, a hard and tender swelling above the groin on the right side. The patient continued to improve up to the 13th, when signs of acute peritonitis suddenly set in, with vomiting, sunken face, thready pulse, and tympanitis. The following night she died.

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#### *Rupture of an Ovarian Cyst during Labour.*

M. Quenu relates the following case, which occurred under the care of M. Polaillon. The patient was brought into the hospital when she had been in labour for three days, and three fruitless attempts had been made to perform version. The left shoulder was found to be presenting, and two more attempts were made to effect version; but the tetanised condition of the uterus rendered it impossible to reach the feet, or even the breech. M. Polaillon then extracted the child by embryotomy. The patient, however, died within twenty-four hours.

At the autopsy the peritoneum was found to be roughened and

injected, but without any deposit of lymph. The peritoneal cavity contained about a litre and a half of sanguineous fluid, in which were numerous pus corpuscles. The uterus showed no lesion, but the retro-uterine cul-de-sac was filled by a collapsed cyst, opening into the peritoneal cavity by a small perforation. This was adherent to the posterior surface of the uterus and to the rectum. The cyst appeared to have originated in the left ovary; the left Fallopian tube was healthy and free from adhesion. The right ovary was healthy, and contained a corpus luteum, but the Fallopian tube on that side was fixed by false membranes to the tumour and to the uterus. It appeared that the semi-purulent fluid found in the peritoneal cavity was due to the recent rupture of the cyst; but it seemed open to doubt whether the cyst resulted from an ovarian foetation, or were an ordinary ovarian cyst of which the internal surface had been altered by inflammation.

The inner surface of the cyst was red, and covered with irregular protuberances. On microscopic examination, its wall was found to consist of two layers—a dense outer layer of connective tissue, and an inner layer of embryonic tissue, bearing all the characters of the tissue of very vascular sarcomata. It was considered by M. Chambard, who made the examination, that this tissue resembled that of cysts into the interior of which are sprouting growths having the nature of medullary sarcoma.—*Archives de Tocologie*, June, 1877.

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#### *The Structure of the Placenta in Extra-uterine Foetation.*

In a paper read before the Société de Biologie on May 26th, 1877, M. de Sinéty gives the result of the histological examination of a specimen from a case of extra-uterine foetation, recorded by M. Dumontpallier. The patient was twenty-nine years old, and a multipara. Menstruation had been regular but profuse, lasting twelve or fifteen days. She last menstruated as usual on February 19th, and she had no suspicion of pregnancy. On March 20th she had a slight sanguineous discharge from the vagina, and on March 23 she died. At the autopsy was found, besides an enormous sanguineous tumour, a foetus about 55 mm. long, attached by a funis 9 ctm. long to a placenta 2 ctm. in thickness at the thickest part. The pavilion of the right Fallopian tube was blended with the placental mass, but the tube itself was not dilated, nor was its canal occluded. The pregnancy was therefore of the abdominal variety, and of about two and a half months' development.

On microscopic examination the author found that the placenta presented a close analogy in structure to placenta in intra-uterine foetation, including the presence of maternal blood-sinuses. Its middle layer was composed of such blood sinuses, and chorionic villi, of which a certain number contained vessels. Around the villi, as in the normal placenta, existed a layer of those cells, as to the nature of which authors are not yet agreed, Kölliker regarding



them as epithelial, Ercolani considering them to be of maternal origin, identical with the cells of the decidua, and playing an important part in the physiology of foetal life. Towards the maternal surface was a layer of cells, but of much less thickness than in the normal placenta. The cells themselves, however, were identical in aspect and dimensions with the so-called giant cells of the decidua. The external layer was formed by a band of fibrous tissue representing the peritoneum, the elements of which appeared to have undergone little modification, its vascularity only having increased. The points of difference from the placenta in intra-uterine pregnancy were the comparative thinness of the layer of giant cells and the fact that there were none of the numerous non-vascular lacunæ, which most anatomists regard as being the remains of the hypertrophied uterine glands.

The uterus was 9 ctm. long, and its walls 2 ctm. thick. Its internal surface was smooth and uniform, and to the naked eye it did not appear to be lined with a decidua. On microscopic examination, however, it was found that the glands as well as the whole mucous membrane were very slightly hypertrophied, and infiltrated with small round cells. In some of the glands the normal epithelial lining could be detected. All the glands, however, did not terminate by a free opening into the uterine cavity. In some parts the glandular layer was covered internally by a tissue formed of small round cells, strongly coloured by carmine (embryonic elements or leucocytes), in the midst of which were irregularly distributed numerous vessels. The surface of the uterine cavity was nowhere covered, as in the normal condition, by an epithelium continuous with that lining the glands.

The conditions observed in the uterus agreed with those described by Ercolani in a case of tubal foetation of from two to three months' development, except that in Ercolani's case the decidua was much more developed, and its elements of larger size. The author considers that the difference may depend upon his own case having been one of abdominal foetation, and that the stimulus upon the uterine mucous membrane in such a case may be less directly active than in one of tubal foetation.

The two Fallopian tubes were permeable, and presented no appreciable difference one from the other. The right ovary contained a corpus luteum 25 mm. in diameter.—*Archives de Tocologie, July, 1877.*

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#### *Uterine Thermometry in the Diagnosis of Pregnancy.*

In a paper published in the *Lyon Médical*, Dr. Marduel reviews the evidence which has been adduced as regards the relative temperature of the uterus, and its value in diagnosis. The first mention of the subject was in 1851, by Baerensprung, who found that the development of eggs was accompanied by an elevation of temperature. He also made observations on rabbits and on pregnant women, and



arrived at the conclusion that the foetus in utero has a higher temperature than the mother.

In 1866, Schroeder published observations showing that the temperature of the gravid uterus exceeded that of the vagina by  $0^{\circ}\cdot19$  C., and that of the axilla by  $0^{\circ}\cdot29$  C. For the former of these differences Winckel gave a value of from  $0^{\circ}\cdot13$  to  $0^{\circ}\cdot19$  C. In 1869, Wurster measured the comparative temperatures in the vagina of the mother and the rectum of the child in a breech presentation, and found the foetal temperature to be higher by  $0^{\circ}\cdot5$  C. In a paper published in 1872, in the *Archiv für Gynäkologie*, Cohnstein contended for the value of uterine thermometry in diagnosis, first, in the early months, as evidence of the existence of pregnancy, and secondly, as evidence of the life of the child. If the death of the child be suspected, an equal temperature in uterus and vagina would prove it to be actually dead, but a single observation to the contrary would not be absolute proof, for the excess of heat in the foetus would only be very gradually lost. During delivery the method would also be of value, and when the os was fully dilated, and the foetus descended into the pelvis, it would be sufficient to take the temperature of the vagina, which would then participate in the heat of the foetus.

The first positive observations on an extensive scale were published by Fehling in the *Archiv für Gynäkologie* for 1874. The number of cases was eighteen. In twelve cases, in which the uterine temperature was equal or inferior to that in the vagina, still-born children were delivered after some days. In four cases, the uterine temperature was from  $0^{\circ}\cdot15$  to  $0^{\circ}\cdot30$  C. higher than that in the vagina, and the children were living. In one case the temperature of the uterus was  $39^{\circ}\cdot1$ , that of the vagina  $38^{\circ}\cdot9$ , but yet the foetus was dead and macerated. In this instance, however, the discrepancy was explained by the fact that the mother had been for some days in a febrile condition. In another case the mother had syphilis and hydrops amnii, and the foetus was supposed to be dead, no movement having been felt for fourteen days. Nevertheless, the temperature of the uterus was  $38^{\circ}\cdot0$ , that of the vagina  $37^{\circ}\cdot9$ , nine and a half hours before delivery. Eventually, a child affected by pemphigus was expelled, which made a few respirations, and gave some signs of life.

Schlesinger, in the *Wiener Medizinische Wochenschrift*, 1874, contested the accuracy of these deductions, and published observations in which he had found the uterine temperature higher than that of the vagina, even apart from the gravid condition. Almost all of his subjects, however, were suffering from uterine disorders.

In another paper in Virchow's *Archiv* for 1874, Cohnstein brought forward further evidence in support of his conclusions, including five instances in which, after the deaths of the foetus, the uterine temperature had fallen to the level of, or below, that in the vagina. By experiments on rabbits with thermo-electric piles, he also found that, apart from pregnancy, there was no difference in temperature between the uterus and vagina. In his first paper Cohnstein had considered

that the introduction of a curved thermometer into the gravid uterus, between the membranes and the uterine wall, was absolutely without drawback ; but he now somewhat qualified this opinion, admitting that the introduction of the thermometer through the internal os may involve some risk of abortion. He considered, however, that this risk might be run when it was necessary to establish a precise diagnosis. He admitted also that in certain cases—namely, acute metritis or endometritis, para- or perimetritis, ulceration of the internal surface of the lips of the os, the non-gravid uterus may have a temperature higher than that of the vagina. On the other hand, in fibroid tumours, chronic hypertrophy of uterus, or ovarian tumours, there is no such difference.

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### *Gynæcic Summary.*

#### *Lithotomy in a Girl Nine Years of Age.*

In a paper read before the Société de Chirurgie, M. Lemée records a case in which he performed lithotomy by the urethral method on a girl nine years old. In August, 1872, the patient began to suffer from pain in the hypogastrium, and frequent and painful micturition. Walking became increasingly painful, and, in September, incontinence of urine supervened. M. Lemée was called in on November 8th, the child being then unable to leave her bed. He then discovered a vesical calculus which appeared to be of very large size. On October 12th lithotomy was performed by the urethral method, without the occurrence of any untoward accident. The incision was extended to the pubes, but the extraction was effected with difficulty, on account of the size of the calculus. The stone weighed 15 grammes and measured 45 mm. in its greatest diameter, and 26 in its smallest. It was ovoid in shape, and friable, and in its centre was discovered a rusty needle. According to the child's confession, this had been in the bladder for two years. On the 25th of October, thirteen days after the operation, the patient left her bed, and had no incontinence of urine, except at night; soon after, incontinence had completely ceased.

The committee which presented the report of the paper (consisting of MM. Tillaux, Polaillon, and Périer) expressed its approval of M. Lemée's choice of operation in this case, and contended against the conclusions arrived at by Mr. Walsham in the Bartholomew's Hospital Reports for 1875, that vaginal lithotomy is always preferable, as involving a less risk of subsequent incontinence, and that incontinence of a more curable kind. In the discussion which followed, several speakers expressed their preference for lithotrity, when the calculus is not too large. MM. Tillaux, Duplay, and Le Fort, however, considered lithotrity a less favourable operation in the female than in the male sex, because of the short and straight course of the urethra, which did not allow sufficient urine or injected water to be retained in the bladder during the operation. M. Anger related two cases,

and M. Paulet one, in which urethral lithotomy had been successfully performed in women, and in which the resulting incontinence had rapidly got well. M. Verneuil considered the risk of permanent incontinence to be much greater with urethral lithotomy, and recommended, in children, lithotrity if the calculus were friable; suprapubic lithotomy, if it were of large size; in adults vaginal lithotomy, if lithotrity were not practicable, considering that the cure of vesicovaginal fistula is easy with our present resources.—*Annales de Gynécologie*, May, 1877.

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*A Case of Ovulation without Menstruation.*

In a paper read before the Société de Biologie, Drs. Siredey and de Sinéty report the state of the pelvic organs in a woman aged thirty-five, who had never menstruated, and who died from pulmonary tuberculosis. About the age of twelve, she began to feel lumbar pain, which recurred every month, and which was often accompanied by an attack of migraine. At the same time she had for one or two days a leucorrhœal discharge, but this never had any sanguineous tinge. Marriage took place, at the age of twenty-six, but did not modify her condition, and she always remained sterile. For the last four years the periodical pains and leucorrhœa had entirely ceased.

At the autopsy some old adhesions were found at various points of the internal genital organs. The uterus, in its external aspect, presented the normal appearance of that organ, being about 6 cms. in length. When a longitudinal section was made, however, it was apparent that its walls were extremely thick (15 mm.), and its cavity of very small dimensions, being only 45 mm. in length, of which length as much as four-fifths belonged to the cervix. It appeared, therefore, that it was a uterus of infantile type, which had become affected by metritis, and its walls hypertrophied in consequence.

On microscopical examination, it was found that the cervical glands were less developed than normal. The mucous covering of the body consisted only of a single layer of epithelial cells. At certain points there were depressions of this layer into the subjacent tissue, forming pits of greater or less depth, but nowhere could be found veritable glands comparable to the tubular glands of the adult uterus. The condition was therefore the same as is normally observed in the newborn infant.

The uterine parenchyma was rich in large arteries, having thick walls, surrounded by a zone of connective tissue. This connective tissue, as well as the bundles of muscular fibre, was infiltrated in places with small cells, which were strongly coloured by reagents. This condition of the uterine walls appeared to be consecutive to a perimetritis, of which the traces remained in false membranes and numerous adhesions.

A section of the ovaries showed numerous cicatrices of corpora

lutea, resembling the corpora lutea of menstruation, in various stages of regression. Several of these had a greatest diameter as large as 8 or 9 mm. There were also normal follicles up to the size of 4 mm. in diameter. A few cicatrices, resulting from degenerated follicles which had never ruptured, were also seen. It was to be noted, that although all trace of monthly periodicity, even of pain and leucorrhœa, had disappeared for four years, the ovaries thus gave proof of quite recent ovulation, and in some of the follicles the point of rupture could still be detected.

### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

"Catalogue of the Radford Library." By Charles C. Cullingworth. Manchester. 1877.

"Morphia in Childbirth." By W. T. Lusk, M.D. New York. 1877.

"Subinvolution of the Uterus." By B. B. Browne, M.D. Louisville. 1877.

"The Use of the Obstetric Forceps in Abbreviating the Second Stage of Labour." By E. S. Dunster, M.D. Lansing. 1877.

"New Intra-Uterine Pessary." By V. H. Taliaferro, M.D. Atlanta.

"Extirpation of the Functionally Active Ovaries." By Robert Battey, M.D. Rome, Georgia.

"Iodized Phenol, a New Uterine Escharotic and Alterative." By Robert Battey, M.D.

"On the Surgical Complications and Sequels of the Continued Fevers." By W. W. Keen, M.D. Washington. 1877.

"The Strumous Element in the Etiology of Joint Disease." By V. P. Gibney, M.D. New York. 1877.

"Obstetrics in the Country." By F. H. V. Grosholz, L.K.Q.C.P. Manchester. 1877.

"A New Uterine Repositor and Retracting Speculum." By R. T. Cooper, M.D. Dublin. 1877.

"The Actual Cautery, and its Employment in Cutaneous Surgery." By H. G. Piffard, M.D. Charleston. 1877.

"Report of the Obstetrical Department of St. Thomas's Hospital." By Robert Cory, M.B.

Communications received from Dr. Angus Macdonald, Professor Trenholme, Dr. Aikman, Dr. Herman, Professor Roe, and Mr. Cullingworth.

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Original Communications.

ON THE BEARINGS OF CHRONIC DISEASE OF  
THE HEART UPON PREGNANCY AND  
PARTURITION.

BY ANGUS MACDONALD, M.D., F.R.C.P.E., F.R.S.E.

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(Read before the Obstetrical Society of Edinburgh.)

(Continued from p. 439.)

CASE XXV.—*Aortic Insufficiency.—Slight case.—Dyspnœa  
and Palpitation apparent about Sixth Month.—Patient  
gets better under treatment.—But Premature Labour came  
on in the Eighth Month, and was followed by Recovery.*

(Translated from Spiegelberg, *Archiv für Gynäkologie*, Bd. x. s. 239.)

Patient nineteen years old, primipara; applied for aid when the pregnancy was about six months advanced. Had been suffering greatly for weeks from severe palpitation, and had had two attacks of angina pectoris. Countenance very red, but no cyanosis, no œdema, no albuminuria.

With treatment similar to the other case patient improved. Fell in labour, however, in the eighth month, and got easily over it. After this the symptoms disappeared, and the patient made a good recovery.

The two foregoing cases present examples of pure aortic lesion. The first was a severe case; the second a comparatively slight one.

No. LVI.—VOL. V.

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It will be noticed that they fully bear out Spiegelberg's statement that in this lesion the danger is specially apt to arise during the latter half of the pregnancy, or, if that is got over, during the labour, and that at that period it is apt to be extreme. But once delivery is effected, then remission of the threatening symptoms may be expected with considerable likelihood.

The great relief afforded in these cases by delivery forms one of the most telling points in favour of Spiegelberg's theory of diminished aortic pressure immediately on the emptying of the uterus.

But I am not prepared to admit such a sweeping conclusion in the face of so many difficulties. My explanation of the beneficial result is this,—that the down-bearing pains are unquestionably associated with a very greatly intensified aortic pressure, and that this tension acts during the second stage of labour with a threatening effect; but so soon as the uterus is emptied, the original pressure is restored, and thus a calm of the disturbance is the result. I hold, therefore, that it is recurrence to the normal, or, at least, nearly normal tension before delivery, that is the explanation of the beneficial effects of labour in these cases, and not the occurrence of a sudden diminution of aortic pressure.

The results of these five cases were not favourable, three recovering and two deaths.

The following three cases, though important, are not strictly capable of being included under any of the above headings.

CASE XXVI.—*Dilated Weak Heart.*—*Right Side chiefly affected.*—*The Right Auriculo-ventricular Orifice dilated.*—*Chronic Bronchitis and Emphysema aggravated by Pregnancy.*—*Premature Labour coming on at Seventh Month under Threatening Symptoms.*—*Delivery.*—*Slight Improvement.*—*Death Twelve Days afterwards, with Pulmonary Œdema and Congestion of Bronchial Tubes.*—*Fatty Kidneys.*

For the opportunity of watching this case I am indebted to Dr. Matthews Duncan.

Ann Glenn, aged thirty-seven, a needlewoman, carrying her fourth child, was admitted, 11th of January, 1877, to the Royal Infirmary, under Dr. Haldane, and transferred on the 13th to Dr. M. Duncan's ward. She believed herself to be seven months pregnant. She was very cyanotic. Her habits have been rather intemperate. Her illness began thirteen months ago, with pain in the back and shoulders, cough, palpitation, and swelling of the face and limbs. In March last she was in Ward XI. for one week, with bronchitis and œdema of the lower limbs, but no notes of her case can be found. After leaving the Infirmary convalescent she worked for two months before becoming pregnant. As the pregnancy advanced, however, the troublesome symptoms returned, and she lost strength. During the last two months her legs and labia have swelled more and more, her expectoration has been profuse, she has suffered from severe dyspnœa, amounting at times to orthopnœa, and for the last month has not been able to leave her bed.

On admission, she was livid, and almost breathless. The lower limbs and labia extremely œdematous. Slight uterine pains occurred occasionally. On January 13th, after transference to Dr. M. Duncan's ward, he incised the labia preliminary to inducing labour next day. Her breathing was then orthopnœic; lips cyanotic; pulse 120, weak, but regular; respirations 36. No abnormal dulness over the chest. At both bases, before and behind, coarse crepitation mixed with fine crackling audible. Over the rest of the chest coarse crepitation heard, along with some sibilant and sonorous râles. Expectoration copious, rather thick, and adhesive. The presence of ascitic fluid could not be made out with certainty. Epigastric pulsation could not be determined, apparently on account of the uterine tumour. Cardiac impulse weak and diffused. Apex beat most perceptible on a line perpendicular with the nipple between the sixth and seventh ribs. The transverse dulness at the level of the nipple passes about half-an-inch outside it, but does not pass beyond the mid-sternum towards the right. First sound of the heart, in the mitral area, weak and muffled. Second sound clear, following very closely on the first; dis-

proportionately strong, but not accentuated. No distinct murmur audible at any of the cardiac orifices. Urine scanty ; sp. gr. 10·20 ; acid ; slightly albuminous, and with hyaline casts. Ordered poultice to front of chest, and brandy six ounces per diem ; also,

R Tr. digitalis,  
Tr. ferri perchlor., āā ℥x, thrice daily.

January 14th.—Labour began without interference this morning. It lasted for six-and-a-half hours, but was only severe for about half an hour. A premature child was born alive, but died shortly after birth. The placenta came away twenty-five minutes after the child. No bleeding occurred.

At twelve o'clock on the day after labour she looked more cyanotic than on the previous day. Pulse extremely feeble. She, however, expressed herself as feeling somewhat easier since her delivery. The cardiac region could only be examined, and that imperfectly. There could now be made out epigastric pulsation quite markedly. There is, however, no murmur audible. Expectoration still copious.

She improved somewhat during the next four days, and on the 22nd Dr. Haldane examined her heart, and considered there was dilatation of the right side, consequent on emphysema and bronchitis. From the fifth day she grew worse, and on the eleventh day after labour she died. She was semi-comatose for a day before death ; passed urine involuntarily. Dry cupping was tried, but afforded only temporary relief to the dyspnœa.

*Post-mortem Examination.*—Patient died 26th January, 1877, and the autopsy was made at one o'clock P.M. on 27th January, by Dr. Wyllie.

The body was well formed and developed. The lower extremities were dropsical.

*Thorax.*—There were old adhesions over the apex and part of the external surface of the right lung. The right pleural sac contained about a pint of serous effusion. There were also some old pleuritic adhesions over the apex of the left lung, but the left pleural sac contained only two or three ounces of serum. The anterior edges of both lungs were markedly emphysematous. The bronchial tubes on both



sides were congested, and contained a great quantity of viscid muco-purulent secretion. Some of the smaller bronchial tubes were slightly dilated, and presented a good deal of thickening and induration of their walls. The substance of both lungs was greatly engorged with blood, and very œdematous. This was best marked in the left lung, for on the right side the pleuritic effusion had somewhat reduced the bulk of the organ, and in some degree had limited the congestion and œdema of its substance. The heart was somewhat enlarged, weighing twelve ounces. The chambers were filled with dark fluid blood. Its valves were natural, but the right auriculo-ventricular orifice was considerably dilated, admitting six fingers; cone-diameter was 1·7 inch. The left auriculo-ventricular orifice was natural, admitting only three fingers. The right auricle was much dilated, but not hypertrophied. The right ventricle slightly dilated, and its muscular wall was slightly hypertrophied, measuring three-eighths of an inch in thickness. The left ventricle was slightly dilated and slightly hypertrophied, its wall measuring half an inch in thickness. The left auricle was natural.

*Abdomen.*—There was about a pint of serous effusion in the peritoneal sac.

The uterus was well contracted. It measured in length, from the peritoneal surface of the fundus to the os externum, six inches, and in breadth, between the origins of the two Fallopian tubes, four inches. Internally, the cervix measured two inches in length, and the body of the uterus three inches. In thickness the anterior wall of the uterus measured one inch, and the posterior one and a quarter inch. Both the anterior and posterior walls were coated with a dirty grey débris, which presented an appearance something like that of a diphtheritic membrane. The grey coating was not present in the cervix, the mucous membrane of which presented the natural arrangement of folds.

The liver weighed three pounds. On section it presented a nutmeg appearance.

The kidneys weighed, right  $7\frac{1}{2}$ , left  $6\frac{1}{2}$  ounces. The capsule could be easily stripped off, and the surface beneath it was smooth, but on section the cortical substance pre-

sented in a moderate degree the mottled or streaked appearance characteristic of fatty degeneration, and on microscopic examination the epithelium of the tubercles was found to contain very abundant fatty molecules.

In this case it will be noticed that there are a good many complications. We have a certain amount of degeneration of the kidney, some emphysema of the lungs, and some chronic bronchitis. Still the leading points of the case are so very like those we have already seen in cardiac cases pure and simple, when severe, and complicating pregnancy, that I am satisfied that the cardiac mischief formed here the most essential lesion. For example, we had extreme dyspnœa, amounting often to orthopnœa; we had also the pulmonary œdema, cyanosis, and latterly we had effusion into the cavity of the right pleura, all of which we have learnt to expect as accompanying severe cardiac disease when pregnancy was present. Finally, we have the usual spontaneous interruption to the pregnancy, precisely at the time when preparations were being completed to induce labour. It is positively amazing to notice how often the same occurrence has repeated itself in the course of our recorded cases.

There certainly was not a clearly defined murmur in this patient's case, but there was a distinct muffling of the first sound. There was also a clear disturbance of the rhythm of the heart, as I noticed again and again. The second sound followed abnormally quick upon the first. This was, no doubt, due to imperfect action of the ventricles, which allowed of the semilunar valves being shut before they were completely emptied. One might have expected reduplication of the second sound here, as the resistance in the pulmonary circuit was markedly great, so that, notwithstanding the slight renal disease, one would have expected the tension in the pulmonary artery would have been greater than in the systemic circuit. But there was no evidence of such condition. That difficulty admits of explanation, however, in this way—that both ventricles were clearly weak, and the right one more so than the left, so that the weakness of the latter was not able to send the blood

forward with such tension as to cause either marked reduplication or accentuation of the second sound.

Dr. Wyllie, in order to oblige me, weighed and measured the heart with great care. It is perhaps not safe to attempt any inference in regard to the normal heart from the condition of the diseased organ. Still, we may surely indicate what seems the direction towards which the condition in which this heart was found leads us. In the first place, the left auricle was dilated, but not hypertrophied, which agrees with Larcher's statements. In the second, the right ventricle was slightly hypertrophied. This is against Larcher's views of the healthy heart in pregnancy. But we have a ready explanation of its hypertrophy in the chronic bronchitis and emphysema of the lungs. Next, it is noticed that the left ventricle was slightly hypertrophied, which organ bears out Larcher's views. There was here no valvular lesion to induce hypertrophy, nor any general cause, with the important exception of a certain amount of renal disease.

Those who deny a normal hypertrophy of the left ventricle of the heart during pregnancy will, of course, maintain that the renal obstruction was sufficient to account for the existing hypertrophy in the left ventricle. To them I reply that, at any rate, the condition of the left ventricle in this patient does not contradict, if it does not strongly support, the views of the French authors. It will be noticed that the weight of the heart as a whole was about one-half greater than normal.\*

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\* Since writing the above, it has been my good fortune to obtain a section of the body of a patient who died from puerperal convulsions a few hours after delivery, in whose case the normal hypertrophy of the heart during pregnancy was unmistakably demonstrated. The patient was a healthy young woman, eighteen years of age, who had enjoyed the best of health till about thirty-six hours before death, so that there can be no objection founded on the plea that the gradual effects of the nephritis had induced cardiac hypertrophy. The lesion was altogether acute, every valve of the heart also was normal. The brain was examined, and the whole case will, I hope, by-and-by, form the subject of a communication on the subject of puerperal eclampsia. But all I need state now is, that Mr. D. J. Hamilton, who performed the section for me, remarked at the operation that the heart seemed enlarged, and bulged very much to the left. On more accurate examination, he subsequently reported to me as follows:—"Miss M.'s heart was found to weigh 9½ oz., the left ventricle was decidedly hypertrophied, its walls at the thickest part measured three-quarters of an inch. The right ventricle was only slightly hyper-

CASE XXVII.—*Acute Endocarditis.—Vegetation on Mitral Valves, leading to Capillary Cerebral Embolism and Convulsions.—Labour by Accouchement Forcé.—Death.*

(Abridged translation from Ahlfeld, *Archiv für Gynäk.*, Bd. iv. s. 158.)

Patient 22 years of age had unilateral convulsions of the right side, due to what appeared apoplectic extravasations. Labour began spontaneously, but was completed by accouchement forcé, in consequence of the severity of the convulsions. The patient had some post-partum hæmorrhage, and died almost immediately afterwards. Section after death proved the presence of acute endocarditis. Vegetations were found on the mitral valve from the size of a millet seed to that of a pea. Extravasation of blood was seen under the pia-mater. Hundreds of capillary apoplexies were found in the grey substance of the brain, some about the size of a millet seed or pea, one the size of a lentil in the pons Varolii. The opinion that the symptoms were due to embolism in connexion with the endocarditis, though it approached certainty, was not substantiated by finding an embolism. Ahlfeld thinks the emboli must have affected only the minute vessels. Microscopic examination could not be made.

I have included this case, though it is outside the scope of my paper, because it exhibits a phase of risks of cardiac disease which has hardly been touched upon in the records of the other cases. The most like it is Ahlfeld's other one (see Case XX.). It proves that in acute cardiac disease the risk is greater than even in chronic cases. In fact, we are certain that the more acute the condition is when pregnancy supervenes, the greater is the risk, up till the period has arrived when the compensation that has been established begins to be disrupted, when the risks begin to increase again in the other direction. The explanation is obvious—viz., that in the more acute cases the compensation has not had time to become established. In conditions such as this, Case XXVI.,

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trophied." A single well-observed case of this kind is surely worthy of a great deal more consideration than any amount of doubtful disputations founded on abstract principles.



we have the additional risk of embolism, from the escape of granulation from the valves, as seems to have occurred here.

CASE XXVIII.—*Acute Rheumatism in Fourth Month.—Abortion in the Sixth, followed by Ulcerative Endocarditis, and Embolism of the Left Subclavian, and of Abdominal Aorta and Common Iliacs.—Death.*

(Abridged translation from Lebert, *Archiv für Gynäkologie*, Bd. iii. s. 40, und folg.)

The principal points of the case are as follows :—

Patient aged twenty-one had an attack of acute articular rheumatism in the fourth month of pregnancy, and made only a slow recovery. She was admitted to hospital on 5th June, 1861, in sixth month of pregnancy, being pale, cyanotic, her pulse 120, weak, breathing shallow, with occasional mucous râle. Cardiac dulness increased, especially transversely, which extended from left border of sternum to beyond the nipple. Only very slight increase in perpendicular dulness. At apex first sound partially covered with a soft systolic blowing murmur, and second sound clear, but accentuated in the pulmonary area. At other orifices nothing abnormal. Tongue furred ; thirst great ; urine free from albumen. On 6th a rigor, followed by fever and palpitation, and pain in epigastrium. This state of matters repeated itself on 7th, and during feverish attack much breathlessness and præcordial oppression. Digitalis in small dose every hour, and mustard plaisters over abdomen were ordered.

On 9th matters worse ; pulse 104 ; cardiac dulness advanced to midsternum. Systolic murmur increased. In afternoon sudden pain in whole of left upper extremity, with coldness and loss of motion. Sensation and motion returned in an hour, but relapse of attack in evening ; pulsation in radial, bronchial, and axillary membranes.

By 13th the patient had got tolerably well, when pains attacked right lower extremity, but without loss of motion. Weak pulsation in crural artery. Improvement till 16th, when, after a violent rigor, labour came on, and ended with birth of

a six months' female child after a few hours. After labour a fresh rigor, followed by collapse, irregular pulse, breathing difficult, palpitations great. Patient died on 18th, with every symptom of pulmonary œdema. Post-mortem revealed flabby, dilated, large, fatty heart; extensive ulceration of the mitral valves, more especially of the posterior cusp, which was completely destroyed. There were two large emboli in the left subclavian, one two inches long as it left the aorta, and another an inch long at the distal end of it. The former was loosely attached, the latter firmly held to its walls. At the bifurcation of the abdominal aorta another embolism was situated, which sent a prolongation into either iliac. Lungs were congested and very œdematous. Uterus normal.

Case XXVIII. is also anomalous. It is not strictly one of chronic disease of the heart, as the rheumatism came on acutely during the fourth month of the pregnancy. Still it seemed to me valuable, as presenting a fresh peculiarity of the bearing of heart disease upon pregnancy and parturition. It is to be noticed that the acute rheumatic inflammation did not run the ordinary course upon the endocardium. It is only fair, I think, to hold that this was essentially due to the co-existence of the pregnancy with the rheumatism. But, be this as it may, ulcerative endocarditis was the consequence. This led to great destruction of the mitral valves by the ulcerative process and the formation of large emboli, first in the left subclavian and then at the bifurcation of the abdominal aorta.

This condition of matters alternately oscillated between improvement and aggravation of symptoms, till it culminated in premature labour at the sixth month, after which collapse and pulmonary œdema carried off the patient.

It is thus seen that acute endocarditis is a much more serious matter if it occurs in relation to pregnancy than if it is apart from that state, and that it is very multiform in regard to the possible directions in which it may undermine existence.

I ought here to mention a most valuable contribution to this part of my subject which was made as early as 1853

by the late Sir James Y. Simpson. In the first part of his article on puerperal embolism, at page 523 of his selected obstetrical works, short records of several cases are given which very forcibly bring out the extremely great risk which cases of recent rheumatism run of being the subjects of fresh endocarditis during the puerperal stage, and of severe embolism.

Of five cases recorded by him, in which subsequent post-mortem examination proved the embolism to be due to the escape of cardiac vegetations, one of the patients had suffered from rheumatic endocarditis only a year before the pregnancy, in connexion with which the embolism occurred. Another suffered from an attack of acute rheumatism during the pregnancy, and died a few days after delivery. A third seems to me to have suffered from endocarditis, supervening only after her premature delivery. A fourth is clearly a case of endocarditis puerperalis ulcerosa, whilst in a fifth case the data given are not sufficiently full to enable us to establish the probable commencement of the lesion.

The records of the cases presented by Sir James are extremely interesting from our point of view, and it is striking to find in 1853 his notions on the question so fully matured. He clearly lumps together conditions that ought to be differentiated, however, and, of course, was not aware of the very special tendency of puerperal endocarditis to become destructively ulcerative, and thus to lead to the rapid formation of arterial embolisms.

This tendency for fresh outbreaks of endocarditis during the latter months of pregnancy, and in the childbed week to introduce new risks into the combination of chronic heart disease with pregnancy and parturition, is abundantly dwelt upon by Löhlein, as I have already pointed out. He does not however, to my mind, sufficiently discriminate between the increased risk which is likely to arise in connexion with cardiac affections of a more recent date, and that involved in the more chronic forms of the disease. It seems to me that inflammatory action in the pericardium, if it is not septic in origin, is far more liable to attack cases of heart

disease that are of a comparatively recent origin than those that are of long standing.

In these latter cases, disturbances of compensation appear to me to be the evils that one has most to stand in dread of.

We have thus at length got to the end of our consideration of cases. The last three having been all fatal require no remark in the shape of comparison between their results.

I therefore proceed, in accordance with the original scheme of the paper, to the final part of it, viz. :—

IV. To make some general observations, and endeavour to draw some practical inferences in regard to the prognosis and treatment of cases of pregnancy and parturition, complicated with chronic disease of the heart.

I have endeavoured faithfully to present before the profession this important subject in as complete a form as possible, in order to be able to derive from its consideration accurate conclusions, so as if possible to replace by well-founded opinions the uncertain views that regulate the action of the obstetrical practitioner at present in dealing with cases of the kind.

We have, accordingly, traced the history of the subject in its twofold aspect—viz., as a physiological question and as a pathological one. One point of importance falls here to be noticed, however, which has been brought forward by Dr. Mahomed, and which I had not observed at the time I wrote the first part of my paper. What I refer to is the opinion advanced by him that the normal state of the blood during pregnancy, containing, as it does, an excess of effete matters, tends to induce high tension of the arterial system, and thus to alter the normal relation between the blood and the tissues. This condition, if sufficiently severe, is followed by transudation of the crystalloids of the blood, and these, notably hæmoglobine, will be found in the urine. If this state of matters is allowed to continue unchecked, albumen is subsequently found. According to this author's view, the renal disease and albuminuria, so frequently met with in relation to pregnancy, follow from the altered condition of the blood as to quality and tension. The proximate cause under this supposition is some accidental circumstance,



which throws an amount of work upon the kidney which, under its unfavourable conditions of secretion, it is unable to perform. In this way the kidney disease is made dependent upon the condition of the circulatory system, and not upon any primary defect in the renal organs. Such a view certainly would help much to explain the onset of albuminuria in connexion with pregnant patients, who, up to the moment of its appearance, are perfectly healthy, as well as when it supervenes, as in our Case XXIII., as a complication of cardiac disease. It also explains how albuminuria arises so much more frequently in first than in subsequent pregnancies. The general arterial tension is necessarily greater in first than in subsequent labours. Cardiac hypertrophy during pregnancy would of course act along with the altered condition of the blood in inducing a high tension in the arterial system.

Now, from a careful review of the whole history of the subject, I am satisfied that the balance of impartial evidence lies in favour of those who predicate a certain amount of increase in the size of the left ventricle of the heart especially, as a normal condition during pregnancy. But, while conceding this much, I am at the same time prepared to admit that the amount of tissue change has been somewhat exaggerated by the French authors. Still, on the other hand, I am also constrained to affirm that there has been a needless amount of doubt exhibited on the subject by Fritsch and Löhlein especially, notwithstanding the careful statements of Larcher, Blot, &c. This is, doubtless, partly due to a recoil from the rather extravagant statements of Duroziez in reference to the results he professes to have obtained from percussion. As an additional reason for my belief in normal cardiac hypertrophy during pregnancy, see my foot-note, page 495, regarding a well-observed case of it.

I am also led to believe that, on account of this hypertrophy, as well as on more general grounds, evidence of exalted vascular tension in the pregnant condition, particularly during the latter months, may be unquestionably obtained. Thus there is the peculiar condition of the blood acting in the manner pointed out by Dr. Mahomed, and there is the increased bulk of the vascular fluid, which

must require greater *lifting* power to keep it in circulation, and that lifting power must ultimately be the left ventricle of the heart. There is also the well-known tendency of pregnancy to induce varix in various parts of the system ; and, lastly, we have very great tendency to the evil effects of over-distension, provided the uterus or the abdomen is in any way deranged in regard to the bulk of its contents. The latter is extremely apt to occur without conditions being present that one could well call pathological. Though the experiment of Volkmann, given above, may be fairly used for our purpose thus far—viz., to throw more than a doubt upon the views of Spiegelberg that any great and sudden depression of arterial tension can arise from the simple emptying of the uterus ; for from that experiment it really seems doubtful whether the tension of the arterial system would not be quite as great after as before delivery, and in my opinion it really is nearly, if not quite, as great—yet it in no way invalidates the view that is brought out in the experiments of Fritsch, which show that fluid passing through channels of varying capacity, is either retarded in its course, or requires to be propelled under greater pressure. It does seem to me that the placental and uterine circulation must, to a certain degree, tend to heighten the general arterial tension ; but, at the same time, it appears from the experiments of physiological observers that the sudden obstruction presented to the circulation by the powerful contraction of the empty uterus would tend to increase its tension more than the presence of the placental circulation, so long as the quantity of blood in circulation throughout the body was not sensibly diminished, which it is not after an ordinary labour.

I have been therefore forced to the conclusion that on general grounds during pregnancy there is evidence of increased vascular tension ; but at the same time it is of such a nature as to be almost too delicate for detection with the sphygmograph. Still, extended observation and greater facility in working this instrument, lead me more and more to the conclusion that the sphygmograph does indicate a pulse of high tension, under ordinary circumstances, in the

pregnant female, during the latter months at least. I am quite willing to allow that in forming a judgment in a matter of this kind the sources of fallacy are manifold. In the first place, it is uncommonly difficult to determine with certainty what constitutes sphygmographic evidence of a high tension pulse. Then the same pulse, examined by the same operator, the time and instrument being the same, may give tracings remarkably different, and yet the pulse tension must have been the same throughout ; the only difference being that in the one case the instrument had been better applied than in the other. The kind of instrument used, as well as the amount of tissue in front of the artery, has also an important bearing on the tracing, and so have the structures behind the vessel. The instrument that I have used in obtaining the tracings which are given along with this paper is one of Marey's, of a very light build, supplied with a thin point for making the tracings, and not with a pen point. The latter, I think, is objectionable, because it seldom works well, produces too much friction, and is too heavy for the radial artery to work well. The paper used was well glazed, smoked in the flame of a mixture of spirits of wine and turpentine, and the tracing was fixed by running over its surface some photographer's varnish. Only the radial artery was tried.

I shall now give a selection of pulse tracings from patients that are healthy and pregnant, and follow them with tracings obtained during the lying-in period. The instrument that I employed had no means attached to it to measure the degree of pressure required to obtain the tracing, and besides, as I have not the advantage of an appointment in the Maternity Hospital, in which a great many of them were taken for me by my friend Dr. Playfair, I was unable to make them from day to day on the same patient. The day of the lying-in period was, however, carefully noted in each case. These are doubtless serious imperfections, but all I had in view was to show that the sphygmograph can give evidence of exalted tension in the latter periods of pregnancy ; and secondly, that it rather tends to show that there is no loss, or at least no great loss, of arterial tension during the lying-in period. This latter question has been very hotly discussed

in connexion with the slowing of the pulse peculiar to the lying-in period. Blot and Marey\* hold that the pulse of the lying-in period is one of high tension, so does Dr. Mahomed,† but Dr. Heinrich Meyburg,‡ in a recent paper, goes dead against this opinion, and argues that the pulse of the lying-in period is normally one of low tension. His arguments, however, fail to convince me. The essential points on which he founds his views are that he is able to detect a short and slanting ascension line in the primary wave, then a marked deviation to the right, giving rise to a low level but marked secondary, or tidal wave, and finally a slightly marked dirotic wave.

Finding a somewhat similar tracing recorded by Eulenberg as that of a hemiplectic, Meyburg argues that such a pulse tracing must be one of low tension.

He agrees with other observers, however, in recognising in the pulse tracing of pregnancy, characters indicative of high tension, observing in it the same characteristics as Eulenberg finds in the healthy pulse after digestion.

Now, I have gone very carefully into the matter, and while I fully agree with Dr. Meyburg when he deals with the pulse of the pregnant and parturient patient, I disagree *in toto* with his view of what is the normal tracing of the pulse of the lying-in woman. I grant that I have met with the same characters as he points out, but even when these are found, and I hold they are not the rule, it is by no means clear that they indicate low tension. I, indeed, look upon the tracing he points out as indicative of low tension to be merely the result of slow cardiac action, and rather to indicate good arterial tension. I have also strong convictions that almost any pulse could be brought to give such a tracing by imperfect application of the sphygmograph and badly regulated pressure. At any rate, of this I am certain, that with the instrument awkwardly applied I have got again and again tracings very like some of those given by Dr. Meyburg in his excellent paper, and being dissatisfied with them, by a

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\* "Bulletin de l'Académie de Médecine," t. xxviii. p. 926. 1863.

† Medico-Chirurgical Transactions, London, vol. lvii. p. 223. 1874.

‡ "Archiv für Gynäkologie," Bd. xii. s. 114.

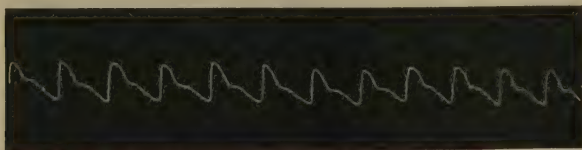


more careful adjustment of the instrument have subsequently obtained well-formed tracings, with a lofty and perpendicular line of ascent, and a secondary wave which was nowhere.

I therefore am persuaded that on sphygmographic grounds the pulse of the lying-in period can be proved to be not a pulse of low tension, but a pulse of high tension, even when it is slow in its rate, and in proof of this view bring forward the following pulse tracings.

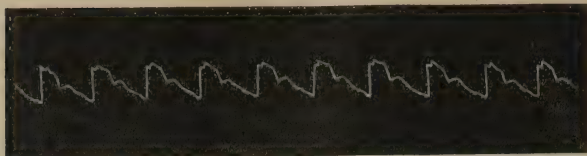
The following eight tracings taken during pregnancy or parturition indicate distinctly a somewhat high tension in the radial at the time. It will be noticed that the ascension line is of good length and nearly absolutely perpendicular, and that in almost all the tracings the tidal, or what Dr. Galabin calls the predicrotic wave, is very well marked. This latter, though by no means absolutely so, is usually associated with high arterial tension. No. 4 is the pulse tracing of Case III. before the hæmorrhage occurred. It indicates great vascular tension, when we consider that the patient suffered from severe mitral stenosis, and consequently when the physical condition tended to produce a pulse of weak tension. To this increased vascular tension I have in the paper ascribed the hæmorrhage which took place into the placenta. The arterial tension as taken in this case two days before labour, contrasts very markedly with that obtained during the labour after the hæmorrhage had taken place, and thus reduced the arterial tension. The tracings subsequently obtained are seen in our Nos. 17 and 18. No. 7 presents features that approach the febrile type of pulse. The dicrotic wave is very strongly marked, still the ascension line is comparatively high. In this case, in consequence of the rate of the pulse, the predicrotic wave is not well marked.

No. 1.



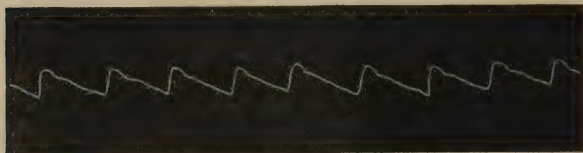
Mrs. Y., aged forty-two. Taken before labour, at full term.

No. 2.



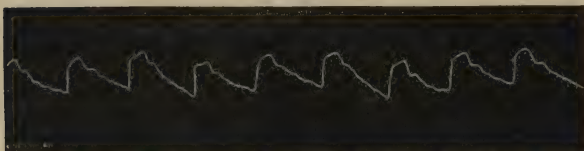
Mary Thomson, aged twenty-six, multipara, tracing taken at  $8\frac{1}{2}$  month of pregnancy.

No. 3.



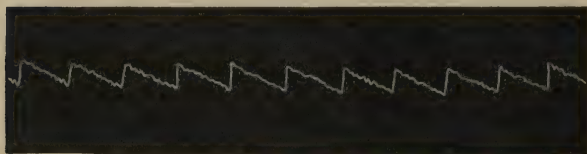
From Mrs. Gilbert, primipara, in the middle of 9th month.

No. 4.



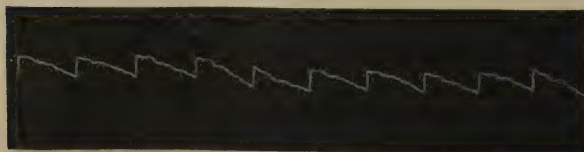
Mrs. C., referred to in Case III. Tracing taken the day before her confinement, which was premature and set up by hæmorrhage in the placenta. Well marked presystolic murmur.

No. 5.



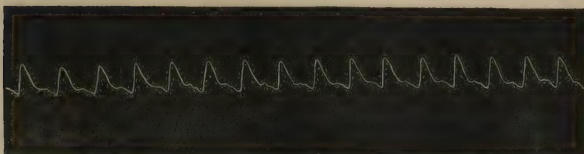
Mrs. Reid, aged twenty-two. Taken during the first stage of labour, which supervened at the 7th month. Heart normal. Interval between pains.

No. 6.



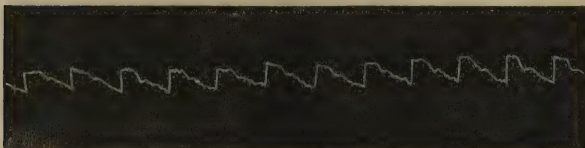
From same patient as No. 5 during a pain. The increased tension seen in the greater perpendicularity of the line of ascent, and in the fulness of the tidal wave.

No. 7.



Pulse of a patient in the 9th month of pregnancy. Patient excited; pulse 120, but heart normal; dicrotic wave well marked; tracing approaches the febrile type.

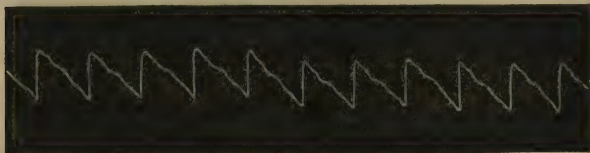
No. 8.



A good tracing, showing a full pulse under considerable tension. Tidal or predicrotic wave well marked. Full time, but before onset of labour pains. Heart normal.

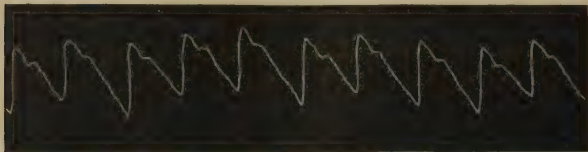
But if the pulse tracings of the pregnant condition present evidence of exalted arterial tension, it seems to me perfectly evident that the following eight tracings I offer from patients in the lying-in period exhibit the same thing unmistakably. The perpendicular range is markedly greater than in those taken during pregnancy. The slanting direction of the line of ascent and the secondary predicrotic wave of nearly the same level as the primary wave, as found by Dr. Meyburg to be characteristic of the pulse of the lying-in period, are seen only in Nos. 14 and 16, where the elevated and full character of the predicrotic wave show abundant evidence of a powerful though rather a slow pulse. In proof of this statement I now present the tracings.

No. 9.



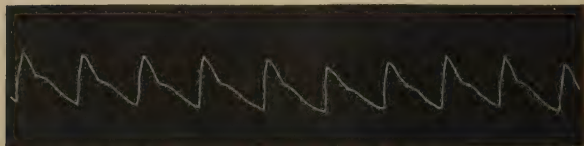
A typical tracing of a strong pulse of high tension. Patient aged twenty-nine. Six days after delivery. Heart normal; pulse 84.

No. 10.



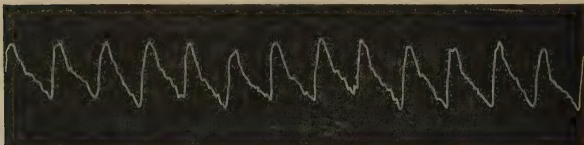
A typical tracing of a strong pulse of high tension. Patient aged twenty-one. Six days after delivery. Heart normal; pulse 72.

No. 11.



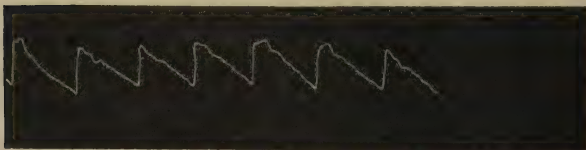
A typical tracing of a strong pulse of good tension. Patient aged forty-four. Two days after delivery. Heart normal.

No. 12.



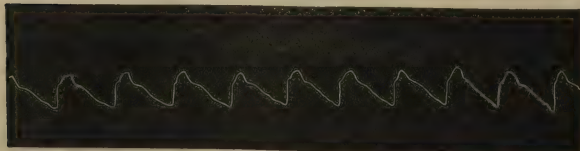
A typical tracing of a strong pulse of high tension. Patient aged twenty-five. Fourteen hours after delivery. Heart normal; pulse 82.

No. 13.



A typical tracing of a strong pulse of high tension. Patient aged thirty-five. Fifteen hours after delivery. Heart normal; pulse 76.

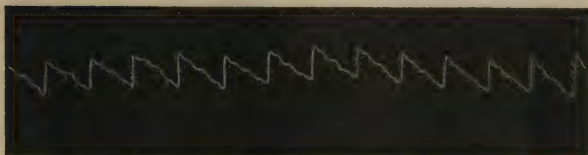
No. 14.



Also indicative of high tension, only the tidal wave is high and round, rising above the line of ascent, because the rate of the pulse was very slow, about 60 per minute. Patient aged thirty-seven. Heart normal.

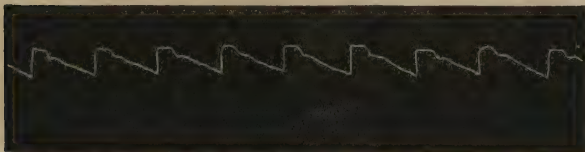


No. 15.



Also a typical pulse of good tension. Patient aged twenty-six. Five days after delivery. Heart normal.

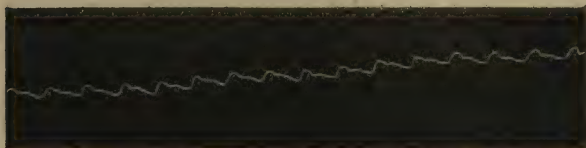
No. 16.



Somewhat similar to No. 14, and for same reasons. Patient aged twenty-eight. Eight days after delivery. Heart normal.

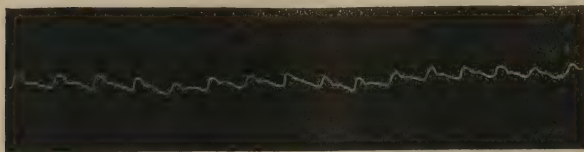
The two tracings, Nos. 17 and 18, which follow, ought more properly to have been given at an earlier part of the paper, when the case of Mrs. C., to which they refer, was recorded. They are presented in order to illustrate the effect of a slight amount of hæmorrhage in reducing the tension of the pulse, and at the same time to show that on such a weak pulse the pains of the first stage even exert an appreciable effect. The influence of these pains must be very markedly developed when the pulse is strong and the pains those of the second stage. Both tracings exhibit weakness and irregularity; but there is a manifest greater abruptness and an observable increased elevation in the arc obtained during the pain.

No. 17.



Tracing of same patient's pulse as is given in No. 4, but after the circulation was weakened by hæmorrhage. Tension extremely weak.

No. 18.



Showing the effects of the labour pain upon the pulse given at No. 18.

I therefore believe that physiological and clinical facts tend to show that during pregnancy, especially during the latter months, arterial tension is increased, and that it is slightly, if at all diminished, during the lying-in period for at least ten days or so after delivery. I do not mean to infer that the exhaustion of a very long labour may not be followed temporarily by low arterial tension, in the same way as any severe exertion is known to be. I need hardly state, as it is generally allowed, that the vascular tension is unquestionably high during parturition, particularly during the second stage, and during a down-bearing pain.

The spirometric observations of Wintrich, and the chest measurements of Dohrn, appear to me to establish it as a tolerably well-ascertained fact that the vital capacity of the female chest is about as great the week before delivery as the week after it.

It is always to be remembered, however, that if any undue abdominal distension occur, either on the part of the uterus, say if it is unusually distended, or from the presence of some distending force acting continuously in the abdomen, the vital capacity of the chest is extremely liable to be lessened, and in this state of matters we find the physiological condition of pregnancy border very closely, and, indeed, overlap the region of pathology. So much for physiology.

We now proceed to pathological considerations.

A collection of 28 cases of pregnancy, complicated with disease of the heart, selected from various sources, and presenting a mortality of 17, that is, 60·7 per cent., of itself proves the combination to be extremely grave in its results.

There are, however, several considerations that diminish the value of such a collection as an expression of the average results.

In the first place, many of these cases were undoubtedly

specially severe, and are, indeed, some of them examples of extreme heart disease that would have speedily terminated fatally, independently of pregnancy or of any other complication.

Secondly, it is manifestly inaccurate to calculate a ratio of fatality from the relation existing between the absolute numbers of deaths and the numbers of the terminal pregnancies. It would obviously be necessary, in order to obtain a just conception of the probable fatality of the aggregate, and of the individual lesions, to add to the number of the pregnancies, in the case of the *multiparæ*, the sum of the pregnancies taking place between the origin of the cardiac disease and the fatal pregnancy. But, unfortunately, this is simply impossible, so that we have to be content with the less accurate statement.

But after all the deductions that the most scrupulous regard for accuracy and truthfulness require us to make, there is left such an amount of fatality in connexion with cases presenting no purely obstetrical cause likely to lead to increased mortality, as leaves it beyond question that the combination is extremely liable to prove fatal. This is more evident when we notice so frequently that the patients *before* becoming pregnant and in the *intervals between* the pregnancies enjoyed wonderfully good health, and this opinion is further strengthened by the large amount of fatal cases that occurred in the *primiparous* patients—viz., so far as I can make out from the records, 9 or 10 out of 17 cases.

The effects of pregnancy, parturition, and childbed upon heart disease, and of heart disease upon these conditions, are mutually injurious, and they require to be constantly considered together.

The evils arising from pregnancy in connexion with cardiac lesions seem to be essentially referable to two classes.

First. Destruction of that equilibrium of the circulation in heart disease, which has been established by compensatory arrangements.

Secondly. Introduction of fresh inflammatory lesions upon the valves of a heart already weakened by disease. These changes may either assume the form of ordinary plastic endocarditis, or the inflammation may follow the type of ulcerative endocarditis.

Destructive results from rupture of compensation are apt to arise either in connection with cardiac lesions of comparatively recent origin, in which the compensating arrangements have not been established when the pregnancy commenced, or in conjunction with advanced cardiac disease in which there is already developed a greater or less tendency to rupture of compensation from degeneration of cardiac tissue and other causes.

Inflammatory affections, on the other hand, attack by preference cardiac cases of more recent origin.

In connexion with all cases of heart disease, but especially those in which acute symptoms of endocarditis appear, there is great danger of embolism.

There is also to be constantly kept in mind the fact that pregnancy is apt to act injuriously, not only upon the valvular arrangements of the heart, but upon the *whole vascular system*, and even on the muscular tissue of the heart. This is especially made manifest by the researches and cases of Lebert. This fact ought to be constantly borne in mind in judging of the probable effects of pregnancy in a case of cardiac disease, and it has important relations towards the condition of the chest, especially in regard to the production of hæmoptysis, &c.

Slight exposure to cold and exertion in the case of pregnant patients who suffer from severe heart disease is very liable to set up destructive and dangerous pulmonary disturbances, which may give rise to pulmonary œdema, congestive bronchitis, hæmorrhagic infarctions of the lungs, pneumonia, &c.

But independently of such exciting causes there is a special liability in such patients to become sufferers from these diseases.

These pulmonary affections in their turn react unfavourably upon the cardiac disease, and tend to precipitate the disruption of a feeble compensatory arrangement.

The records of the cases contained in this paper agree completely with the statements urged by M. Peter, that the dangerous symptoms do not usually appear till after the first half of pregnancy has been run.

In severe cases it is seldom that we find pregnancy continue uninterrupted to the termination of the ordinary period of utero-gestation. It is extremely striking to look back to the cases and see how very frequently this occurs.



Three of the presystolic cases were prematurely delivered, the labour being spontaneous.

One of the eight systolic cases was in a like condition. But I am somewhat at a loss to make out in Fritsch's fourth case whether it was premature or not.

Of the five aortic cases four were prematurely confined.

Of the three irregular cases two were prematurely confined. The distressing subjective symptoms are found to be dyspnoea, sense of suffocation, precordial anxiety. These, along with palpitation and cyanosis and other threatening symptoms, are seen usually to attain such a height at a period within the third trimestre of pregnancy that the accoucheurs in attendance have usually resolved to induce labour. But in every case this intention will be seen to have been curiously anticipated by the onset of spontaneous premature delivery, except in Case XXIII., which was complicated with convulsions, and in Case XXVI., which was one of acute endocarditis, in both of which accouchement forcé, in consequence of convulsions, was practised. These cases, however, both terminated fatally.

In all the cases of heart disease which have been recorded in this paper, it will be observed that if the lesion was at all severe, the labour was found to be accompanied invariably by extreme cardiac irregularity, with a feeble, irregular, and intermittent pulse, much dyspnoea, and cyanosis. In a certain proportion of cases unconsciousness was noticed, the patients having the appearance of persons under the influence of chloroform. In some cases the perturbation of the circulation was such as to end during the labour in sudden death. More frequently, however, we notice that the confinement was tided over, and a temporary delusive betterness succeeded it.

In the case of aortic insufficiency, it is found that with the delivery the serious symptoms disappeared in three out of five cases. The betterness in these is so strongly marked that we are, I think, entitled to hold that if the risks of labour are got over tolerably safely, except the case is all the worse as in our XXII. and XXIII., the prognosis will be favourable.

But if the lesion is mitral, there is fully as much risk of death during the lying-in period as during the pregnancy, provided the diseased conditions are severely developed.

Again, lesions of the mitral, in which constriction is the main element, appear from our cases to be very much more dangerous than when the leading defect is of the nature of insufficiency.

When death results in cardiac cases, the post-mortem examination reveals invariably pulmonary congestion, especially of the bronchial mucous membrane, and pulmonary œdema. Often also we find apoplectic extravasation of blood into the lungs, of recent or of older date, and occasionally pneumonia, with, very frequently, pleuritic effusions. The above results occur independently of any acute changes in the heart. But, in a certain proportion of such cases, acute, plastic, or ulcerative endocarditis introduces a fresh element of danger, and, if the latter occurs, embolism in various parts of the vascular system is almost certain to occur.

The view urged by Spiegelberg, that the sudden removal of the placental circulation occasions diminution of resistance in the arterial system, leads to sinking of aortic pressure and exaltation of venous pressure, is, to my mind, untenable, when we regard the evidence of the sphygmograph during the lying-in period, and also consider the meaning of such experiments as Volkmann's, and when we further take into account the results of physiological experiments, which show that to obliterate a portion of the arterial system heightens the tension in the remainder.

The evil effects of pregnancy in heart disease seems to me to be due mainly to the fact, that in the latter part of the period of utero-gestation more work falls to be done by the heart than previously. It is effected under a somewhat increased arterial tension, owing to the increased size of the ventricle; the quantity in the heart in a given time is slightly greater than in the non-pregnant condition, and the remaining three chambers, while required to do more work, are not correspondingly strengthened. These effects, slight in each individual factor, all act in the same direction, and tend to aggravate blood stasis in the lesser circulation. If any incompetency of the mitral is present, its effects are added to the other pernicious influences in the way of pumping back blood under increased tension upon the pulmonary circuit.

It seems to me that the evil effects are most prominent in the case of mitral stenosis, because all the factors that conduce towards a disastrous issue act in the direction of producing dilatation of the left auricle and of the right heart, which is always the tendency of this lesion. The pulmonic circuit is thus kept, in severe cases of this lesion, in a state of continuous congestion.

Mitral insufficiency, on the other hand, is not so serious, as the pulmonic circuit is kept less continuously under tension ; and it is a general law that vital tissues will long bear an amount of interrupted strain or pressure, when they will speedily succumb to much smaller application of a continuous force. At the labour the chief evil effects seem to be produced from the exhaustion of the weak heart by the extra strain it is subjected to during the second stage.

This leads to destruction of compensation, imperfect filling of the left ventricle, imperfect aëration of the blood, extreme irregularity of the pulse, unconsciousness, and even death in some cases.

During the lying-in period we have still the evil effects of the defective compensation rendered operative by the persistent action of the powerful ventricle, and it must further be remembered that the evil consequences of the severe strain of the labour upon the weak and diseased central organ is very difficult to recover from.

In this manner we explain the tendency of mitral lesions to prove fatal during the lying-in period, premising also in some cases the possibility of an endocarditis having been set up before the delivery.

In the case of aortic disease, the chief danger is complications leading to suddenly increased aortic tension during the latter months of pregnancy, and the extra strain of the bearing-down effects at the confinement. If these are got safely over there seems reason, from the history of such cases, to anticipate good results.

Any undue distension of the abdomen, by encroaching upon the thoracic space and limiting the movements of the diaphragm, is apt to introduce most serious disturbances into a case complicated by cardiac disease, because it intro-

duces additional difficulty into the circulation within the pulmonic circuit.

I cannot see any good ground to believe with Fritsch that the right side of the heart is ever specially empty after delivery. I am decidedly inclined to believe that on that point Spiegelberg has reason on his side when he declares that the right side of the heart is distended. Pathological evidence is in favour of this view. I believe it will be noticed that in post-mortem examinations the right side of the heart, and indeed the lungs generally, are found congested.

Besides, there is not evidence to prove that there is the reflux of venous blood into the abdomen after delivery, which Fritsch seems to think there is. There is reason, on the other hand, to believe that the tension of the vena cava inferior is always greater than that of the abdomen, as Schatz assumes it to be.

At any rate, cases fulfilling the conditions which Fritsch predicates seem to me to be very few and far between. His arguments from the beneficial results from the use of a sack of sand, hand-board, &c., in cases of bleeding are disposed of sufficiently by the observation of Löhlein, that in such cases the post-partum hæmorrhage is prevented by the irritation of those bodies stimulating the uterus to contract, and not merely by their weight restoring the equilibrium of the abdominal pressure.

But these theoretical views are extremely difficult, and require much patient investigation before they can either be completely established or refuted.

I shall conclude my subject by one or two practical deductions from the views that have been maintained in the paper.

1. Chronic heart disease ought to be looked upon as a grave contra-indication of marriage, more especially if it assumes the form of anything approaching to severe stenosis of the mitral, or to serious aortic incompetency; in such cases we ought, if consulted, to dissuade from marriage.

2. There is much less danger in the case of mitral insufficiency pure and simple. But still the risk is even then considerable.

3. In all cases when consulted we ought not to give our sanction to marriage if in chronic heart disease there are any



serious symptoms of cardiac disturbance present, such as attacks of dyspnœa, breathlessness, palpitation on exertion, hæmoptysis, &c., and this injunction ought to be the more imperative the younger the patient and the more recent the acute disorder which has given rise to the chronic lesion.

4. Such patients as are married and have chronic heart disease ought not to be allowed to suckle their children, as that appears to tend to keep up the cardiac hypertrophy and increase the risks likely to arise from the defective heart.

5. All possible causes of cold and all severe exertion should be avoided during the pregnancy, if possible, and more particularly during the latter months of it.

6. Premature labour should seldom or never be recommended, because it is so much more likely to do more harm by disturbing the action of the heart and the condition of the lungs, than any good it might produce by terminating the evil effects of the pregnancy. It is to be remembered that relief of symptoms is not certain after delivery, or anything like certain.

7. The only conditions which seem to warrant the induction of premature labour are the presence of influences which unduly distend the abdomen, and thus keep the diaphragm in a state of continuous elevation.

8. The same careful principles of management ought to guide us in the case of a patient with chronic heart disease during pregnancy and the lying-in period, as in any other state of the system, similarly complicated with heart disease.

9. In almost all the cases I have met with chloroform has been given, and apparently with benefit during delivery. If carefully administered I think it cannot but be useful in all cases. My reasons for this view are given above.

10. All legitimate means ought to be used to lessen the effects of the down-bearing efforts, and therefore the judicious and timely application of forceps or of turning is extremely important. In cases of a large amount of liquor amnii, timely rupture of the membranes, as in Dr. Ziegler's case, is calculated to be of great service, as it allows the diaphragm to descend, and thus lessens the embarrassment in the lesser circulation.

## ON THE MECHANISM OF LABOUR.

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THE detection of an error is often as conducive to progress as the discovery of a new truth. In an argument there are various forms of error. The conclusion may be logically correct, yet not true if the premises are false ; or the conclusion may be true of itself, but the logic false ; or what is true in a special case may be wrongly taken to be so in general. Examples of each of these forms of error are to be found in the literature of our knowledge of the mechanism of labour. My first object, therefore, is to examine some of the premises in the generally accepted arguments regarding the production of the phenomena of labour.

As to the phenomena themselves, it will be taken for granted that there is a general concurrence of opinion ; the differences which exist in this respect do not in any way affect the points to be discussed. It is with the views which have been advanced as to how the phenomena are produced that I shall deal at present. In this respect great differences of opinion exist, not only between different authors, but one and the same writer is found to shift his line of argument, without reason assigned, and to adopt one principle of action in one case and another in another ; to describe one mechanism for normal labour and another for abnormal cases. The cause of this, I hope to show, lies in certain errors, together with the employment of an awkward and altogether unsuitable mechanical principle in the elucidation of the problems which have to be solved.

In all writings on the mechanism of labour the lever action of the antero-posterior diameter of the head holds a prominent place. This lever is divided into an anterior and posterior arm. In the case of this well-known argument it is assumed that because the atlanto-occipital articulation is nearer the occipital than the frontal end, that therefore the occipital is the shorter arm. This relation is also regarded as *constant*, and whenever the occipital arm is found to have had the mechanical advantage over its fellow, it is taken for

granted that there must have existed a proportionately greater pressure upon it. The premises are here in many cases false, and therefore the argument is unsound. It is wrong to suppose that because the vertebral column is attached nearer to the occiput than the forehead, that therefore the posterior arm is the shorter. It may be so in a given case, but not from the above premise. The arms of the lever into which the antero-posterior diameter of the head is to be divided, are not to be measured by a perpendicular let fall from the foramen magnum, but by the line representing the resultant of the forces acting on the lever, and therefore the relative lengths of the arms must vary with the direction of the force. The more the chin is flexed, the shorter will be the posterior, the longer the anterior; the more the chin is extended, the shorter will be the anterior, the longer the posterior; and between these two there must be a position in which the arms are equal.

Dr. Barnes, in his "Obstetric Operations," correctly figures this in his illustrations (figs. 26 and 27), but in the text he is led astray by the assumed constant relation; and to account for the production of a face presentation he infers there must be a greater resistance to the posterior arm. In fig. 26 a glance is sufficient to show that the posterior arm is in that case longer than the anterior.

It may be stated shortly that the mechanical advantage of the two arms of the lever is to be so far reckoned in proportion to the lengths into which the line representing the direction of the resultant of the uterine forces divides the antero-posterior diameter. It therefore varies in different cases, and *must never be assumed to be constant.*

In using the lever argument another error is made regarding the resistance offered by the soft parts. This is assumed, in normal labour, to be equal all round, and therefore acting equally on the anterior and posterior arms. Although not definitely stated, yet the reasoning of writers shows that they regard the resistance of the soft parts as always acting in contrary and parallel direction to the propelling force, and as regards the anterior and posterior surfaces of the head as acting parallel to one another. This is altogether false.

For the sake of simplicity, let us limit the question to the passage of the head through the cervical ring. It may be assumed that the latter is composed of tissue of equal dilatibility throughout, and therefore to a uniformly shaped body will offer an equal resistance all round. But the head is an unequally shaped body. If the nature of the cervix be as supposed, then the direction of the different pressures will be, in mechanical terms, normal—that is, perpendicular to the surface at the point at which they act. Regarding the general curvature of the head, it is evident that the pressures on the anterior and posterior surfaces will never be parallel to each other, but will meet in a point within the head. It is also evident that they must frequently, and in fact generally, act at different angles to the expulsive force. Their moments of pressure must therefore in general be unequal, even though the forces are equal.

Again, we are constantly finding the lever principle improperly applied. Thus Dr. Matthews Duncan, in his “Mechanism of Parturition,” has the following passage (p. 231):—“In natural labour the lever arms are measured from the centre of motion, the occipito-atlantoid articulation; and the anterior is the longer, and consequently the occiput descends.” In the flat pelvis “it is otherwise. Here the lever arm is to be measured not from the occipital foramen, but from the bitemporal diameter, and the posterior arm is the longer;” hence in this case the forehead descends.

He here rightly points out that, in the latter case, the diameter engaged in the contracted conjugate is the centre of motion; but he falls into the common error of regarding the occipital articulation as the centre of motion in normal labour; and thus compels himself to seek a different mechanism for normal and for contracted pelvises. But the occipital articulation is not the *centre of motion* in the movement he is discussing—viz., the descent of the occiput before the forehead. A movement does take place at the joint, but the centre of motion is not there. If the forehead is arrested, then the centre is there; but if the forehead is not fixed, but only progressing at a slower rate than the occiput, then the



centre of rotation is somewhere between the two, in the antero-posterior diameter or long axis of the head.

We thus see that the lever argument, as commonly used, leads to false reasoning, and the principle is often applied wrongly. To use it properly, moreover, is to deal with an extremely complicated problem. Simple as the lever action seems to be, it has led obstetricians into error and confusion.\* It is now, moreover, an antiquated mode of dealing with such subjects as the mechanism of labour. The sooner we get rid of it in obstetrics the better, and unlearn the erroneous modes of thought which have arisen from it. The mode in which the subject should be regarded will be discussed presently, but there are yet more errors to be corrected.

Before the rupture of the membranes, it is agreed that the resultant of the uterine pressures acts in the direction of and coincides with the longitudinal axis of the uterus; but when the liquor amnii has escaped it is assumed that the expulsive force is transmitted through the foetal vertebral column, and therefore the resultant passes through the occipito-atlantoid articulation. It is essential that we should be certain that this is true or not. If it be true, then a change in position of the uterine resultant takes place when the membranes rupture, a change which must have an important influence on the mechanism. If it be true, then also must the expulsive power act at a steadily increasing disadvantage till the occiput reaches the arch of the pubis, when it is totally ineffectual to complete the expulsion of the head. To get out of this difficulty some authors state that another change occurs, "the uterine force no longer acts on the occiput but on the anterior part of the head."† Others draw a resultant between the force exerted through the spine and the pressure from the posterior portion of the floor of the pelvis. The effect of this, however, would be simply to drive the head through the perineum, and not to produce the process of chin extension,

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\* *Vide* "On the Action of the Midwifery Forceps as a Lever," by Dr. Galabin, in this Journal for November, 1876.

† Playfair, vol. i. p. 215.

or rotation round the pubis—the real movement which takes place.

In proportion to the amount of liquor amnii which escapes certain changes will take place. The diameters of the uterus will be diminished, its walls will be in contact with a larger surface of the foetal body ; but, whatever the changes, it may be justly assumed that in normal labour, and of such I alone treat, a sufficient quantity of the waters remains to prevent so great a change in the form of the uterus as will alter the direction of its longitudinal axis. That any such change occurs has never been advanced ; all that is asserted is that the transmission of the force through the spine so largely preponderates, that the direction of the resultant coincides with this structure. This I do not admit.

The foetal vertebral column is not a rigid, but a very flexible beam, the flexibility being greatest in the direction of its concavity. The convex surface is in contact and coincides with the curve of the uterine wall, upon which it can move with very little friction. The direction of the pressures exerted upon the spine by the uterine wall with which it is in contact will be perpendicular to the surface at the point where it is exerted. If the forces to which it is thus exposed be not counterbalanced by those from the opposite wall, the result would be an increased curvature of the spine : a result which we see happens when all the liquor amnii has escaped. But in ordinary labours a sufficiency of waters remains, which enables the opposite uterine wall to exert an equal force on the concave surface of the spine and prevent this flexion. This force, however, must be equal in all directions ; and whilst it presses laterally and upwards to prevent the flexion of the spine, it must press equally downwards on the anterior portion of the base of the skull. The whole surface of the base of the skull is therefore equally pressed upon, and if there is any change it must be by a loss on the occipital side, from imperfect transmission through the compressible body, as compared with the perfect transmission through a fluid. Pressure is undoubtedly at times exerted on the head mainly through the spinal column. But this holds good only so long as the resistance to the onward

movement is less than the tendency to flexion. So soon as the former is equal to the latter, then the pressure through the fluid which balances the flexion tendency must come into play, and the forces acting on the anterior portion of the head be at least equal to those on the posterior. The transmission of the uterine force mainly through the spinal column can therefore only take place during the earlier part of a pain. During the strong effort of the contraction, when most effect is produced, the uterine force cannot be regarded as being mainly transmitted through the vertebral column. There is therefore no reason to suppose that there is any change in the position and direction of the resultant of the uterine forces after the rupture of the membranes.

And again, even were the spine sufficiently rigid to resist the flexion, and the uterine forces were mainly transmitted through it, it is a curved rod moving along a surface of the same curve. Any force therefore transmitted through its long diameter would take the direction of the last portion of the curve. The uterine force would therefore be exerted upon the head in a direction quite different from what writers state when affirming that the vertebral column is its medium of transmission.

I therefore maintain that it is wrong to suppose that after the rupture of the membranes any essential change occurs in the resultant of the uterine forces, or that the expulsive force is mainly transmitted through the foetal spine. The previous acceptance without challenge by most writers of these two statements has but led them into difficulties, and has introduced much confusion into the subject. I would state as a most important and primary principle in the elucidation of the mechanism of labour, that *the resultant of the uterine forces is, throughout the whole of labour, always in the direction of and coincides with the position of the longitudinal axis of the uterus.* It also follows as a corollary that the axis of the head through which the resultant passes will constantly change with the position of the head. It does not always pass through the occipital joint.

(To be continued.)

## ON THE USE OF CHLOROFORM IN "STAMMERING OF THE UTERUS" DURING LABOUR.

By DAVID P. JAMES, M.R.C.S.E.

Hon. Surgeon to the Hokitika Hospital, New Zealand.

NOW that the value of chloroform in labour is such an established fact it may seem superfluous to advance anything in its favour, but I have lately met with two cases, in one of which its aid and in the other the want of it, seemed so striking that I cannot forbear from forwarding a brief note if you should deem it worthy of insertion in your valuable journal. Some few weeks ago I was called to attend a lady (a multipara) who had been three or four hours in labour. On entering the room I at once noticed that the "pains" seemed to be productive of unusual suffering. On making an examination per vaginam I found the os dilated just sufficiently to admit the tip of my forefinger; the cervix was severely ulcerated and extremely sensitive to the touch. After waiting for two hours, during which time I made three or four examinations, I found that no progress was being made in the dilatation of the os, and that the uterine contractions continued to be very painful and "jerky;" in short, that a condition existed which can be best described as a stammering of the uterus. I am adapting the term applied to certain conditions of other organs by my respected teacher, Sir James Paget, in one of his valuable clinical essays. I determined to try the effect of the administration of chloroform. The result was simply perfect; the contractions became quieter and more regular, and in the course of less than an hour the dilatation was complete, and the labour was speedily and satisfactorily terminated. The second case, which only occurred a week or two ago, was that of a lady who had married late in life and had had two miscarriages; her third child was still-born after a very tedious labour of nearly thirty hours. The pelvis was somewhat contracted in all its diameters. As this was the first occasion upon which I had attended her, and as her anxiety to have a living child was almost painfully great—an anxiety probably



more marked by reason of her religion—I determined, if possible, to enable her to attain her object. As soon as was practicable I applied the long forceps. There was nothing unusual in the progress of labour until the head had cleared the vulva and the object of the forceps was achieved ; then ensued the same condition of things to which I have applied the term “stammering ;” the neck was tightly grasped by the soft parts, and short spasmodic contractions of the uterus supervened, which placed the infant’s life in dire peril. Owing to the excited condition of the patient and her violent restlessness, considerable time was lost before I succeeded in passing my finger, having no blunt hook by me, round the child’s arm. Having accomplished this, by firm and *steady* traction I at last overcame the *stammering* and completed the delivery. The cord was coiled tightly round the child’s neck, and it was to all appearances still-born ; indeed fully twenty-five minutes had elapsed before animation was restored, and then only by inflating the lungs by means of a catheter.

For some time past it has been my practice never to attend a confinement without having with me a bottle of chloroform, but unfortunately on this occasion I had somehow missed my usual custom. I will never willingly do so again, as I firmly believe that in this case, had I had some chloroform by me, considerable anxiety and difficulty might have been avoided by its timely administration. Before quitting the subject I may briefly refer to a case which occurred in my practice, about a year ago. I administered it to the lady at her own urgent request during the whole course of the labour. She was delivered of twins after an easy labour, the second child being born exactly fifteen minutes after the first. The first child breathed and cried vigorously immediately after its birth ; the second, and smaller one, breathed fairly, but presented an appearance which I attributed to the effect of the chloroform, whether rightly or not I am not prepared to affirm. I am not aware whether any effect similar to this has been noticed before or not, but I think it well to raise, for the consideration of those abler and more experienced than myself, the question whether the adminis-

tration of chloroform in midwifery practice may not possibly affect the proportion of still-born children unfavourably. Having noticed the two cases, in one of which its benefit was so marked and the other in which I think it would have been so valuable, I feel that it is only fair also to mention the case in which it possibly had a tendency to an injurious effect. Regarding the latter case, I may state in conclusion that the rules given for its administration by Dr. Playfair were carefully adhered to.

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### *Notices and Reviews of Books.*

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*Transactions of the American Gynæcological Society.* Vol. I. for the year 1876, pp. 396. Boston: Houghton and Co. London: Trübner and Co.

THE American Gynæcological Society, which held its first annual meeting at New York in the year 1876, and comprises among its Fellows the leading obstetricians of America, has certain special points in its constitution. The number of Fellows is limited to sixty, and no candidate is eligible for active Fellowship until a paper written by him on some subject connected with Gynæcological Science has been submitted to, and has been approved by, the council. It may thus be expected that the papers contained in its Transactions will be more select than those presented to medical societies in general, and the volume now before us gives promise that this expectation will be fulfilled.

It is intended that the Society shall hold an annual meeting, continuing for three days, the place of meeting varying from year to year. From the inaugural address by the president, Dr. Fordyce Barker, we learn that papers received by the Society will be divided into two classes. (1.) Those useful and interesting to be read and discussed at the meetings—namely, papers on questions on pathology and practice which have not yet been settled by the general sentiment of the profession. (2.) Papers requiring careful perusal and

private study, especially those on practical questions which involve great statistical research, analysis, and deduction; and all those which are based on original physiological, anatomical, and pathological studies. The latter class, among which are likely to be included some of the most valuable papers, will appear in the Transactions, but will not be read at the annual meeting.

Among the most important papers is that by Dr. Emmet, on the etiology and treatment of uterine flexures. This is based upon wide statistics of cases of flexion, taken from the author's private practice, including their relation to the various disturbances of menstruation. For the treatment of ante flexion of the cervix, the author speaks in the highest terms of the results of incising the cervix backward in the median line. He uses scissors flat on the face, with the blades curved at an angle from the handles. He regards the operation as practised by Simpson for incision of the uterine canal above the external os as uncalled for and detrimental. Retroflexion, he considers, can be cured by the long-continued use of hot-water injections and hot baths, with the application of glycerine, and occasional blistering of the neck, in combination with gradual and repeated reposition by the finger in the vagina.

Dr. Batty contributes a paper on Extirpation of the Functionally Active Ovaries for the Remedy of otherwise Incurable Diseases, a more appropriate title for the operation which has hitherto been spoken of as normal ovariectomy. Ten operations are recorded, practised upon patients who were suffering from ovarian engorgement with displacement, or from ovarian dysmenorrhœa. In one instance the operation was performed by abdominal section, but in the rest the ovaries were removed through the vaginal cul-de-sac. There were two deaths, and one or two other patients had a very narrow escape. In the absence of the author the discussion on this operation, which has also been performed by Dr. Thomas, Dr. Trenholme, and others, was deferred till the next meeting of the Society.

An analogous operation is related by Dr. Peaslee. The patient was a lady, thirty-three years old, who had never men-

struated, the vagina terminating in a cul-de-sac, three inches deep. By the rectal touch an ovary was discovered on the right side, of normal dimensions, nearer than usual to the inner edge of the iliacus muscle. No trace could be made out of uterus or left ovary. The patient had suffered from incurable epilepsy, associated at first with hysterical manifestations ; of late years she had a continual pain in the loins. When the pains ceased, nervous twitchings succeeded, culminating in a seizure. Lately the attacks were purely epileptic ; she remained for hours unconscious after them, and the strength of her intellect was being gradually impaired.

The author, who considers that, although hysteria may occur in the male, yet, as occurring in the female, it is always ovarian and not uterine, proposed, with the concurrence of Dr. Emmet and Dr. Thomas, to remove both ovaries, if they existed. This was done by abdominal section, the left ovary being found of normal size, about an inch below and behind its usual site. Both ovaries were tied with a double silk ligature, removed with scissors, and the ligature cut short. A closed tube was passed into the pelvis through the incision, to remain seventy-two hours or more, should symptoms of septicæmia occur. The patient died sixty hours after the operation, of peritonitis. At the autopsy two nodules were found representing the cornua and part of the corpus of a bipartite uterus. They contained no cavity. Both ovaries showed several small cysts on the surface.

Dr. Byford relates a series of cases in which fibrous tumours of the uterus became disintegrated and expelled, sometimes spontaneously, sometimes under the use of ergot. The author has the highest faith in the efficacy of ergot, provided that the tumour is situated near the mucous surface of the uterus, the uterine fibres are well developed, and the drug of reliable quality. Dr. Gaillard Thomas records a case of abdominal pregnancy treated by laparotomy. The operation was performed some time after the death of the foetus, the tumour having been at first tapped, in doubt whether it was an ovarian tumour. The fluid was declared by an excellent microscopist to present ovarian corpuscles, but its removal revealed the presence of a solid mass,



diagnosed as a foetus. At the operation no attempt was made to remove the placenta, and a large glass drainage-tube was left in the incision. The foetus proved to be a finely-developed girl, eighteen and a half inches in length, and weighing seven pounds. Its death seemed to have been due to a long hair, wound repeatedly round and round the funis, so as to cut off the circulation. The patient having afterwards symptoms of septicæmia, carbolised injections were used, and five weeks after the operation the foetid placenta came away, after which she rapidly recovered.

In a paper on pneumatic self-replacement in dislocations of the gravid and non-gravid uterus, Dr. H. F. Campbell dicusses fully the mechanism and advantages of a postural treatment, which has long been found of great value. He insists more explicitly than has usually been done upon the necessity of providing for the entrance of air into the vagina, in order to secure the efficacy of the treatment. The position he recommends is not the genu-cubital or knee-elbow, which he regards as inadequate, but the genu-pectoral; and in the diagrams the women are represented as kneeling on a horizontal plane, with the thighs vertical, and touching the same plane with their chests—a position which most persons, if they try the experiment, will find it impossible to assume. Probably it would spare patients some inconvenience to be content with the genu-cubital position, or allow a small pillow to be placed under the chest, and to raise the pelvis higher by placing a cushion or folded blanket under the knees, if this should be necessary, which is not often the case. From the well-known normal inclination of the pelvis, it follows that an inclination of the body to the horizon of about  $35^{\circ}$ , in the prone chest-descending position, is generally sufficient to make the entrance of the pelvis look vertically downwards. In the genu-cubital position this angle may be increased up to about  $45^{\circ}$ , while in Dr. Campbell's diagrams, in the genu-pectoral position, it is represented as about  $55^{\circ}$ , an angle which is unnecessary, and less efficacious than a more moderate one.

Dr. Næggerath, whose views as to the disastrous and irremediable consequences of gonorrhœa are already known,

contributes a paper on this subject. He points out the important fact that from gonorrhœa in women not only chronic catarrh of all the sections of the mucous membrane up to the peritoneum, with sterility, may result; but that acute, chronic, or recurrent perimetritis, salpingitis, and ovaritis, are frequent consequences. He holds also that such patients are liable to acute perimetritis upon the slightest surgical interference with the uterus, and urges the view, highly important if confirmed, that this condition of latent gonorrhœa in women may become established without any acute attack having ever occurred. The final conclusions show that the author's opinion has undergone no modification since his earlier paper. They are that gonorrhœa, both in the male and in the female, persists for life in certain sections of the organs of generation, notwithstanding its apparent cure in a great many instances, and that about ninety per cent. of sterile women are married to husbands who have suffered from gonorrhœa either previous to, or during, married life. The discussion on this paper showed that obstetricians in America, as elsewhere, do not accept the author's startling view as to the absolute incurability of this disease.

Dr. Goodell in a short paper forcibly urges the immediate operation for rupture of the perineum, complete or incomplete, during parturition. He narrates a series of cases, all more or less successful, and gives his experience, that even if only sufficient union be obtained to secure a bridge of tissue, this is of great value in preventing cicatricial contraction, although it may be necessary to divide it in performing the secondary operation. Of British authors, Dr. Barnes contributes an important paper on the relations of pregnancy to general pathology, in which the author's breadth of view on the questions of general medicine and physiology involved in obstetrics is, as on many previous occasions, strikingly manifested. Dr. Matthews Duncan narrates several cases, illustrative of central rupture of the perineum, as a lesion which may take place in any degree, slight or severe, and which may be combined or not with the more ordinary perineal rupture. Dr. Wiltshire sends a short note on rapid

death from uremic coma, due to occlusion of the ureters, in certain cases of malignant disease of the uterus. Mr. Lawson Tait sends a paper on hermaphroditism.

It will be seen that, although the papers are of very high importance, several of them are on subjects which their authors have already discussed elsewhere. Doubtless we may expect that the articles in succeeding years will show a still higher value and originality. In the present volume printers and publishers have done their part in a way which leaves nothing to be desired. It should be read by all who take an interest in Gynæcology.

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## BRITISH MEDICAL ASSOCIATION.

*An Address delivered at the opening of the Section of Obstetric Medicine, at the Annual Meeting of the British Medical Association, in Manchester, August, 1877. By W. O. PRIESTLEY, M.D., F.R.C.P., President of the Section.*

### THE HISTORY OF OBSTETRIC MEDICINE IN MANCHESTER.

GENTLEMEN,—When I was honoured with an invitation to accept the Presidency of the Obstetrical Section at the present meeting of the British Medical Association, it struck me that it would be interesting to look back on the part which Manchester has from time to time taken in the advancement of obstetric science, and to recall some of the great names who have contributed to its literature.

Manchester, indeed, has had its school of obstetric medicine as well as its school of politics. It has made its mark both in the present and preceding century, and it seems to me a happy coincidence that the Address in Obstetric Medicine, which is given once only in three years, should be delivered in Manchester, a town so much identified with the progress of the science and art of midwifery, and the Association may be congratulated that the address is to be delivered by so competent an authority as Dr. Barnes.

So long ago as 1773, Mr. Charles White, a pupil of William Hunter, and Surgeon of the Manchester Infirmary, wrote a treatise on the "Management of Pregnant and Lying-in Women," which went through three editions; and in 1784 he issued a work on the "Nature and Cause of Swelling of the Lower Extremities which sometimes happens in Lying-in Women." This work also appeared in three editions, and was remarkable as one of the first scientific attempts to unravel the pathology of the disease called "phlegmasia dolens" by a careful study of the anatomical changes taking place in

the limbs. Mr. White gave a very accurate description of the affection, and adopted the view that it depends on "obstruction, detention, and accumulation of lymph in the limb."

In 1800 Dr. Hull published an extended treatise on the same subject; and, from his introductory remarks, it may be gathered that he first bestowed the term "*phlegmasia dolens*" on the inflammatory swelling of the legs observed in puerperal women, and assigned it its place in the nosology of Cullen. He expresses a fear lest some of his readers should be puzzled by the new name. He regarded the disease as an inflammatory affection, producing suddenly a considerable effusion of serum and lymph into the cellular membrane of the limb. Whatever may be thought of the pathology of these two authors in view of the more recent researches of Dr. Robert Lee, Dr. Mackenzie, Professor Virchow, and others, there can be no doubt that both Mr. White and Dr. Hull made most important contributions towards elucidating the nature of *phlegmasia dolens*, and deserve great credit.

Probably no single locality in the United Kingdom has contributed so much as Manchester and its vicinity to the discussion and elucidation of the subject of Cæsarian section. In 1769, Mr. Wood here performed the operation upon a woman whose pelvis became greatly distorted by *mollities ossium* after she had previously borne children naturally. This case led to a discussion, in which Mr. Simmons, Mr. Ogden, and Mr. Tomlinson, of Manchester, with Dr. Sims, of London, took part; and out of this controversy came the excellent treatise by Dr. Hull, entitled "*A Defence of the Cæsarian Operation*," &c. In this work, Dr. Hull entered most intelligently into the nature of the cases requiring the operation, the best method and the proper time for performing it, the sources of danger, and the subsequent treatment of the patient. This book, besides, gave much information on the subject of pelvic distortions. If, with the light of later experience, exception be taken to some of Dr. Hull's positions, his book may be said to have formed the groundwork of information on Cæsarian section for British practitioners, and to this day it is regarded as containing sound opinions and good practice.

The promulgation of Dr. Hull's views was unfortunately mixed up with a most rancorous controversy between him and Dr. W. Simmons, in which Mr. Simmons charged Dr. Hull with being "little acquainted with the decencies common among authors, and ignorant of the language and manners of a gentleman." The contention in bitter personality inevitably recalled the celebrated combat between Susannah and Dr. Slop, graphically described by Sterne in "*Tristram Shandy*," and its occurrence is much to be regretted.

In 1801, Dr. Hull translated and published M. Baudelocque's two memoirs on the Cæsarian operation, thus giving English practitioners further information on the subject; and the history of the operation is still further identified with Manchester through the much respected name of Dr. Radford, who delivered the first obstetric address before



the Provincial (now named British) Medical Association at Manchester in 1854. Dr. Radford then selected Cæsarian section for the subject of his address, and subsequently published a more extended memoir with an appendix of cases. From this memoir, it appears that, up to a certain period, the greatest number of cases, relatively speaking, in which Cæsarian section had been performed in Great Britain and Ireland had occurred in this city and neighbouring districts. Of fifty-five cases in England and Wales collected by Dr. Radford up to 1865, no fewer than twenty-five had occurred in Lancashire. The occurrence of this large proportion of Cæsarian operations in Lancashire, was, no doubt, in a great measure, due to the pernicious influences surrounding the occupation of young girls and women in factories. Cogent evidence of this is to be found in the fact, which I have on good authority, that, since the introduction of the Factory Act, which prohibits girls being employed in factories before a certain age, and limits the hours of work both for women and children, such deformities of the pelvis as necessitate the Cæsarian section have become much rarer, and Lancashire is losing its unhappy pre-eminence in this respect. This, one of the indirect ways in which the Factory Act has ameliorated the condition, and lessened danger and suffering for poor working women in parturition, deserves to be recorded, and must furnish a source of gratification to Lord Shaftesbury and others who were concerned in passing this beneficent measure.

Looking still onward, we learn that to Mr. Kinder Wood, of Manchester, is probably due the first suggestion that the placenta should be detached from the os and cervix uteri in certain embarrassing cases of placenta prævia, where the severity of the hæmorrhage places the patient in peril, and immediate delivery is difficult or impossible. Sir J. Y. Simpson developed this question more fully later, and impressed upon it, as he did on all subjects he handled, the imprint of his genius. Sir James evidently was not aware, when he made his first communication on this subject, that Mr. Kinder Wood had before him adopted this plan of treatment, or had recognised the fact that complete separation of the placenta would arrest hæmorrhage in cases of placental presentation. Becoming informed later, he made a full acknowledgment, and expressed himself as having "great and sincere pleasure in rendering posthumous justice to the memory of a man of distinguished professional attainments."

And here I may remark that some misapprehension still exists concerning Sir James Simpson's teachings as to the treatment of placenta prævia. It is common enough to hear Sir James accredited with recommending separation of the placenta as a general plan of treatment for cases of unavoidable hæmorrhage. Those who have carefully studied his writings are not likely to fall into such an error; but it may be well once more to point out that Sir James Simpson only proposed the separation of the after-birth before delivery in cases where the hæmorrhage had been so great that the patient could not

bear the shock of immediate delivery, or where perilous flooding was associated with such an undilated or undilatable state of the passages as to render speedy delivery impracticable.

These doctrines, it is well known, have been still further modified more recently by the obstetric orator at the present meeting—Dr. Barnes.

Tracing further the history of obstetric medicine in Manchester, I approach delicate ground, inasmuch as many of the men identified with its progress are still living, and their names are familiar to all of us. Of the venerable Dr. Radford, whose name I have already mentioned, and whose first medical diplomas date as far back as 1817, everybody must speak with admiration and esteem. A long life, combined with ardent love of his profession, have enabled him to make many substantial contributions to the literature of obstetrics, and to form a very fine collection of instruments. This collection now belongs to the Radford Museum in Manchester, and, by kind favour, was lent for a brief period to the Obstetrical Society of London for exhibition at its *conversazione* last year. Among Dr. Radford's more important writings, I may mention his "Essays on Various Subjects connected with Midwifery," his "Essays on Cæsarian Section and Deformities of the Pelvis," "Cases of Torsion, Doubling, and Expulsion of the Fœtus in Shoulder-presentations," "Cases of Laceration of the Uterus," &c.

Dr. John Robertson, whose first diploma dates as far back as Dr. Radford's, has also, during his lifetime, rendered signal service to his profession. His writings bear the stamp of a genius which has been recognised by many eminent authorities, and his practical suggestions have greatly helped to further a more scientific and precise use of midwifery instruments.

Dr. Charles Clay, besides entering the domains of archæology and general science, has brought renown to the Manchester school by the diversity and extent of his contributions to obstetrics. Without going into the question of priority, I may state that Dr. Clay's name is indisputably associated with the earliest successful cases of ovariectomy in this country, and that he materially aided, by his own work and writings, to establish the propriety of an operation which has led to such wonderful results in the hands of Mr. Spencer Wells, Dr. Thomas Keith, and others. Further, Dr. James Whitehead, both by his writings and practice, has attained more than a local celebrity as an accomplished gynæcologist; and Dr. Renaud, who, I understand, does not engage in obstetric practice, yet has added important material to its literature. I have often heard my late friend, Dr. Montgomery, of Dublin, speak of the value of his researches on the corpus luteum, and, in his admirable work on "The Signs and Symptoms of Pregnancy," Dr. Montgomery says of Dr. Renaud's account of the corpus luteum that, "as far as it goes, it is decidedly one of the best and most accurate."

I may add that, within the last day or two, Dr. Lloyd Roberts has informed me a Mr. Ward, a surgeon in Manchester, was the first to point out that infantile leucorrhœa was an idiopathic affection, and not necessarily produced as the result of carnal intercourse. The importance of this discovery in a medico-legal sense was illustrated by a case occurring at the time. In 1791, Mr. Ward was asked to examine a little girl about four years old who was supposed to have been violated. He gave evidence to the effect that there were proofs of such violation, and a man was committed for the capital offence. Immediately afterwards, Mr. Ward saw other cases of infantile leucorrhœa in hospital, which a careful examination convinced him were due to natural causes. He was courageous enough to report this to the authorities, with an avowal that he might have been mistaken as to the evidence he had given in the criminal case. This was explained to the judge of assize at Lancaster, and the man was acquitted.

This brief recital does not at all profess to complete the history of obstetric medicine in Manchester; it merely gives a *résumé* of some of its more salient points up to a given period. In any fuller exposition, one could scarcely omit to mention the names of the present honorary secretaries of this Section. They are the worthy representatives of gynæcology in Manchester at this moment, both as teachers in the medical schools and as pioneers in practice.

Since the last meeting of the British Medical Association in Manchester, considerable strides have been made in perfecting the science and art of midwifery, and in investigating and treating the diseases of women. New light has been thrown on the treatment of difficult and anomalous labours; fresh expedients have been suggested to meet special emergencies. The subjects of uterine hæmorrhage, the use of midwifery instruments, the diversities in the method of turning, and the pathology of puerperal ailments, have each received fresh illustration in this country by such men as Simpson, Matthews Duncan, Barnes, Braxton Hicks, and others, and by a host of fellow-workers abroad. In the treatment of diseases of women, the advance has even been more marked. The wonderful results which have recently attended the operation for ovarian tumours are the marvel of our time, and indicate a courageous and skilful battle with disease and death, crowned with a success which twenty years ago was scarcely hoped for.

The impetus given to the cultivation of uterine pathology not many years since by the writings of Dr. Henry Bennet in London, and by Dr. Simpson in Edinburgh, may be said almost to have created the modern school of gynæcology in this country. The various implements introduced into practice, more especially by Simpson, have made diagnosis much more precise and accurate than before. With these improvements, the danger is lest the physician be merged too much into the mere méchanist, and lest he should

look on all derangements of the reproductive organs as having too exclusively a local origin to be remedied with undue frequency by local expedients.

As we are avowedly met here for mutual discussion and criticism, I trust I may be pardoned if I indicate in passing one or two pitfalls into which gynæcologists are prone to stumble in the present phase of our art.

In the first place, out of the mechanical improvements in diagnosis and treatment, there seems to have grown too great a proclivity to trust less to the information afforded by the educated fingers and more than is desirable to instruments. These mechanical aids are often employed as a mere matter of routine, without regard to the pathological nature of the uterine disturbance, in the vague hope that they may assist to find out something, the nature of which is not well defined beforehand, and apparently with the idea that full justice is not meted out to the patient if any are dispensed with. These remarks apply both to the speculum and sound, with other instruments, but especially to the uterine sound. The uterine sound is a great addition to our resources, but there are many uterine affections in which it affords no information whatever, and many in which it is positively injurious. My experience convinces me that it is employed with unnecessary frequency both as an instrument of diagnosis and for restoring the displaced uterus when a finger in the vagina or rectum would equally well answer the purpose. A sound cannot be introduced into an inflamed and tender womb without stirring up more mischief, and it is often forgotten that a preliminary investigation on this point is as needful and desirable before having recourse to the sound as it is to exclude the chances of pregnancy. The result is the infliction of a large amount of avoidable suffering; sometimes it may be an aggravation of the disease for which the patient seeks relief, and an amount of discredit attaching to the practitioner which most men would be glad to escape.

It is of great moment, now that we possess instruments of acknowledged value, to learn the exact limits within which they render actual service, and when they had better be avoided.

Again, as certain remedies have had their fashion for the day, and then have sunk into unmerited oblivion, so, in defiance of sound principles, a single idea in uterine pathology has been raised into a position of undue prominence, and then given place to something else.

At one time, ovarian pathology was in the ascendant; at another time, inflammation of the os and cervix uteri was regarded as the chief ailment from which women suffered; and lately these have given place to the theory that mechanical displacements of the uterus are the root of all evil, and patients, taking their cue from the doctors, at once jump to the conclusion that all pelvic discomforts come from uterine dislocation. Thus the world is afflicted suddenly with what seems an epidemic of flexions and versions of the womb, and a large



amount of time and ingenuity are expended in the invention of pessaries which might be more profitably employed in other directions. Need I point out how important it is that, in all our scientific progress, we should relegate each special subject of study to its proper place in a sound system of pathology, and attach to each morbid condition its true importance? Both in diagnosis and in attempts at cure, while we should have courage enough, when necessary, to face both difficulties and dangers, it comports best with scientific practice to measure as exactly as possible the amount of interference to the needs of the case. All beyond this is not only superfluous ; it is apt to be mischievous.

Turning to another subject, I am anxious to draw the attention of members to the subject of transfusion, which has been chosen by our Manchester *confrères* as a topic for discussion in this Section of our meeting. The operation of transfusion has had a chequered career, and, after being forgotten or neglected for long periods, is again attracting much attention.

From a sketch of the history by the late Mr. Pettigrew and others, we learn that the earliest experiments in transfusion were made in France about 1658 by Hansheau. Lower performed the operation in this country in 1665. M. Dennis, satirically described as a physician "plus occupé des jeux de hazard, que des jeux de la machine animale," subjected a man to the experiment about the same time. Biva and Manfredi in Italy, and Sinnibaldus in Flanders, repeated the experiment only a few years later. The first four volumes of the *Philosophical Transactions*, which cover the years from 1665 to 1704, contain records of several, but all unsuccessful, cases.

After this time, the practice seems to have fallen into abeyance, although Dr. Harwood, of Cambridge, published a thesis on the subject in 1785, and endeavoured to rouse attention to its importance. It was not until 1824, when Dr. Blundell, of Guy's Hospital, reopened the question, that it gained distinct vitality. Dr. Blundell showed, by a series of experiments, that blood may be transfused with success and safety from one animal to another, provided they are the same species ; but, if from one animal to another of different species, the result is fatal. MM. Prévost and Dumas in France, and Bischoff in Germany, believed they had afterwards verified Dr. Blundell's conclusions ; but Dr. Brown-Séquard has shown that there were fallacies in these experiments, and that, under certain conditions, the blood of other animals may be injected into the human body without danger, while he holds with Dieffenbach that defibrinated blood answers as well as fibrinated blood.

Dr. Blundell performed the operation of transfusion eleven times with his own hand ; in ten of these cases there was pressing danger from loss of blood, and in only four of these did he succeed in restoring the patient.

The sparing results attained by Dr. Blundell did not encourage the adoption of the practice by medical men generally. The operation

was regarded as delicate, difficult, and uncertain of success, and it languished, although from time to time new instruments were devised and fresh suggestions were made for perfecting the process. In later days, Dr. Hamilton, of Ayr, Dr. Graily Hewitt, and Dr. Aveling have each suggested modifications of apparatus. Dr. Aveling's method of immediate transfusion was at once so simple and practical that its introduction gave a new impetus to the operation in this country.

*In limine*, it may be said that, as increasing attention is paid to the subject, and apparatus becomes more perfected, greater promise is afforded, and favourable results are gradually growing. The late Professor Martin, of Berlin, recorded fifty-seven cases, in which forty-three were completely successful; Dr. Higginson, of Liverpool, fifteen cases, in which ten were successful; and Dr. McDonnell, of Dublin, de Bellina, of Paris, with others, have published interesting cases.

It will be in the recollection of many members that, at a meeting of the British Medical Association in London, there was a discussion on transfusion, and a lively debate took place between the advocates of *mediate* and the supporters of *immediate* injection.

Just now new life has been imparted to the subject by the appearance of M. Roussel, demonstrating the utility and simplicity of his method for direct transfusion. This subject is obviously a study of deep and increasing interest, as the introduction of the practice in a perfect and simple form may be the means of saving many from the very jaws of death. I commend it to your careful consideration, and, at the appropriate time, to your earnest and dispassionate discussion.

## *Abstracts of Societies' Proceedings.*

### OBSTETRICAL SOCIETY OF LONDON.

*Meeting, Wednesday, October 3rd, 1877.*

Dr. CHARLES WEST, *President, in the Chair.*

Dr. GALABIN showed a Zwancke's pessary which had produced extensive recto-vaginal and vesico-vaginal fistulæ, together with a number of phosphatic calculi which had collected in the bladder. The patient was fifty-eight years old, and the pessary had been introduced six years before. She had not been instructed to remove it herself, and had neglected the direction to come after a time to be examined. Though hæmorrhage and foetid discharge had lasted a year, she applied only a fortnight before to a doctor, who made two fruitless attempts to remove the pessary. She was then sent to the Union infirmary, where equally fruitless attempts to extract it were

made on three occasions, and finally she came to Guy's Hospital. The pessary lay very deep in the vagina, so that it was difficult to discover what the foreign body was ; and those who had previously seen the patient had probably failed to do so. It was at length recognised as being that very objectionable form of Zwancke's pessary in which, when the instrument is open, the arms are fixed by an india-rubber tube. It was imbedded in phosphatic calculi, the base of the bladder being destroyed, and bladder, vagina, and rectum thrown into one common cloaca. One wing of the pessary lay in the bladder, the other in the rectum. The arms were so rusted through that they gave way after the remains of the india-rubber tube had been torn off ; and it proved impossible to remove the instrument by their means. It was finally extracted by pressing with the finger the one wing out of the rectum and the other out of the bladder. Dr. Galabin thought that it could not be too widely recognised that it is very dangerous to recommend a Zwancke's pessary without making sure that the patient understands how to remove it herself, and will do so every night.

Dr. ROUTH was astonished to hear Dr. Galabin characterise as "very objectionable" the form of Zwancke's pessary, in which the arms were fixed by an india-rubber tube. It was a very cheap, and, he considered, a very good form. He had used it constantly at the Samaritan Hospital, and had seen no ill effects.

Dr. BARNES said that patients could never be trusted to carry out the recommendations given to them, and he thought we were bound not to select an instrument which, like Zwancke's pessary, led to such dangerous results if the patient neglected it. He had several times found serious difficulties in extracting this instrument, though he had not seen such extensive injuries as those described by Dr. Galabin. He knew no good form of it. A cup and stem pessary, or the American instrument recently shown by him, was much preferable.

Dr. BRAXTON HICKS said that there was one very objectionable form of Zwancke's pessary, in which each wing was made of two uncovered wires. He had found these deeply imbedded in the vaginal walls. He thought Zwancke's pessary the most clumsy and ill-adapted of any of those used for prolapse. Elderly women would never present themselves for examination as directed.

The PRESIDENT said that Zwancke's pessary first came into notice when Hodge's pessary, now so useful in many cases of prolapse, was not known. He must plead guilty to having introduced it into this country, and he was sorry to hear that it was accused of doing so much harm. No doubt it had been, in a measure, superseded by more modern inventions, but he still thought that it did often do good. Certainly, on its first introduction, it proved very useful.

Dr. WILTSHIRE said that his experience of Zwancke's pessary had been most unfortunate. In one instance, after the patient had worn it two years, large fistulæ had formed, opening into the bladder and rectum.

Dr. HAYES said that all pessaries might produce dangerous results if left too long. In one case he had found a Hodge's pessary which had nearly ulcerated into the bladder.

Dr. ROUTH asked Dr. Barnes whether he had not met with cases of fistulæ, both vesical and rectal, which had resulted from the use of Hodge's pessary, as well as from that of Zwancke. He had done so himself, even when the Hodge was a good one, and had been applied by a good man.

Dr. BARNES said that pessaries were good or bad not in themselves, but in reference to the special case in which they were used. No doubt any pessary, if left too long, might produce ulceration. But a good Hodge, if it fitted, might in some cases be left almost indefinitely without doing any harm. A cup and stem pessary had the advantage that the wearer was compelled to remove it frequently.

Dr. GODSON said that for eight years he had used Zwancke's pessary very freely at St. Bartholomew's Hospital, and had applied it in hundreds of cases. He knew not whether the out-patient rooms of the hospitals were filled with his bad results, but he himself had never seen any. But he agreed with Dr. Galabin that the form of Zwancke fitted with an india-rubber tube was very objectionable and uncleanly. He now used one in which the arms were fixed by a clasp like a brooch. In milder cases, however, in which a Hodge was well borne, he preferred that. Zwancke's pessary was certainly dangerous, if not removed daily. He always gave each patient a printed form with it. In one instance he had found a boxwood ring pessary which had been worn for twenty-six years without doing harm. The patient was forty years old, and came under treatment for menorrhagia, not having any notion that she had any instrument. She afterwards remembered that at the age of fourteen her womb came down at a menstrual period, and she went to Dr. Lever. He put in a pessary, and told her "it would wear away," a remark which probably referred to the displacement, but which was interpreted as applying to the pessary. The woman was single, and the pessary had become so encrusted that it had to be cut through with bone forceps.

Dr. EDIS mentioned the case of a patient in whom he found a pessary, and who had never known that one had been inserted. She had been under treatment eleven years before. In another similar case a Hodge had produced ulceration, and the patient came with symptoms like cancer. All patients should be told to come again in a week.

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*A Synopsis of 1500 Consecutive Labours in the Practice of*  
W. T. GREEN, M.A., M.D. (T.C.D.)

The total number of cases attended was 1500; of these 300 were primiparæ, and 1200 multiparæ. Of the presentations 1433 were



vertex, twenty-seven breech, seventeen foot, six placenta prævia, six funis, five shoulder, four arm, seven brow, and one knee; ten were unrecorded. Fourteen women gave birth to twins. There were six cases of placenta prævia; three of the mothers subsequently died. Two children were born alive. There were three cases of hydatid mole. Of the twin births, in four the children were both males, in six both females, in four male and female. In every case where the twins were of the same sex there were two placentæ and the membranes were distinct, while in cases where the twins were of different sexes there was only one placenta, and the membranes were united. Forceps were used on fifty-one occasions. Turning was employed twelve times, and craniotomy had recourse to twice, once for placenta prævia, once for hydrocephalic head. The total deaths were twelve mothers and seventy-three infants. Of the latter thirty were cases in which the children were not of a viable age. There were several cases of acute specific fever during the puerperal period, which recovered.

The causation of the maternal deaths was as follows:—1. Post-partum hæmorrhage two hours after delivery; exhaustion and death at the end of twenty-nine hours. 2. Post-partum hæmorrhage. 3. Septicæmia following post-partum hæmorrhage. 4. Scarlatina and rheumatic pericarditis; death on the nineteenth day. 5. Death twenty-four hours after delivery, cause not ascertained; no hæmorrhage. 6. Labour at eighth month. Post-partum hæmorrhage, followed on the third day by peritonitis and bronchitis. Death on the eighth day. 7. Primipara, aged thirty-five; labour tedious. Rigor on the third day, followed by peritonitis, and death on the seventh day. 8. Labour short; rigor on third day, followed by erysipelas of vulva and thighs, and death on the tenth day. The child also died from erysipelas. The nurse had lately attended a case of phlegmonous erysipelas. 9. Primipara; labour tedious; septicæmia. Death on ninth day. 10. Tenth pregnancy; labour protracted, terminated by forceps. Rigor next day, followed by peritonitis. Death on tenth day. 11. Febrile symptoms before delivery; peritonitis the day after, with cataleptic convulsions. Death on ninth day. 12. Placenta prævia, with excessive hæmorrhage; version performed. Death from exhaustion four hours after.

The author had never seen idiocy or any other ill effects to the children, either from suspended animation or from the use of forceps, although the dints upon the head often remained for some weeks. After very extreme vomiting in pregnancy he had seen the child quite healthy. He never used ergot. He found cold gin and water the most useful uterine stimulant. Having decided to make trial of perchloride of iron in placenta prævia, he mopped the cervix in one case with the strong solution diluted with three parts of water, and the bleeding ceased at once. In a second case the application was equally effectual in checking hæmorrhage, but a physician who was

afterwards called in objected to it, because it made the os rigid, and rendered the introduction of the hand for the performance of version difficult.

The PRESIDENT remarked that the paper contained clear and valuable records without any superfluous remarks.

Dr. BRAXTON HICKS asked whether Dr. Green could give any information as to the cases of puerperal disease which did not end fatally. More was to be learnt from such instances, for in the fatal cases the course was so rapid that there was little time for observation. He hoped that all such reports in future would contain a full account of the less severe puerperal maladies.

Dr. GREEN explained that he had omitted such cases because already, in the discussion on puerperal fever, he had brought forward a selection of them. Seven or eight years ago he had had quite an epidemic of puerperal scarlatina, but all the patients recovered except one.

Dr. EDIS said that the maternal death-rate in the recent reports made by Dr. Cooper Rose and Mr. Godson was much lower. Dr. Green's mortality seemed to be high, and to require some explanation, unless such were to be found in the nature of the population. As to the case of twins with double or single amnial cavity, further observations were required. Some thought that the septum became absorbed. The still-births seemed numerous, but, if the non-viable children were excluded, the number was similar to that in Dr. Cooper Rose's and Mr. Godson's practice. Probably many children were lost by forceps not being used oftener. The number of forceps cases gave one in thirty, and one only of the mothers died. More detail of the forceps cases, as well as those of illness, would have been desirable.

Dr. BARNES compared the results given with his own statistics when he was physician to the Royal Maternity Charity. There the still-births, excluding those premature, were about 3 per cent., and the forceps very rarely used indeed. Here the rate was about  $2\frac{1}{2}$  per cent., and it would not therefore seem that many had succumbed for lack of forceps. As to the use of perchloride of iron in placenta prævia, if it causes contraction of the uterus where bleeding is taking place, as well as of the os, it does just what is wanted, and this forms no argument against the use of it. The report of the case quoted would seem in its favour. It had been said that the favourable results at the Royal Maternity Charity were much in favour of the use of midwives. But it must be remembered that all premature labours were there excluded, and also that many cases likely to prove serious were told off beforehand to medical practitioners.

Dr. DALY was surprised at one point in the paper, that the author had given up the use of ergot. In nearly every case, except in primiparæ, he was accustomed to give ergot when the head was on the perineum. It was very useful in preventing post-partum hæmor-

rhage, and did not cause retention of the placenta. Within the last ten years he had succeeded in terminating many protracted cases by external pressure, and so avoiding the use of forceps.

Dr. HEYWOOD SMITH asked for the experience of the Society as to whether cellulitis after delivery was more frequent after tedious or difficult labour, or the use of forceps, or whether it were not nearly as frequent from simple septicæmia without other cause.

Dr. EDIS said that the general impression was that the frequent and early use of forceps lessened the risk of cellulitis as well as of peritonitis.

Dr. CHALMERS said that in over 500 cases he had never had any approach to post-partum hæmorrhage, but yet he never used ergot. He used forceps about once in forty cases, and was certain that he could do the mothers no good by using them oftener, although he might save his own time. It was very well for highly-skilled men to advocate a frequent use of forceps, but he thought that among practitioners in general it would lead to greater damage being done.

The PRESIDENT remarked on the reversal of the usual proportion in the sex of the children in Dr. Green's cases, since there were 756 males to 785 females. It was true that it was said that in illegitimate children the usual proportion was reversed. Perhaps Dr. Green would add the cases of puerperal disease to his paper for publication. As to the production of idiocy, he had an impression—although no actual statistics—that there was a connexion, and that he had seen it follow difficult, protracted, or instrumental labour.

Dr. HAYES said that the question as to the use of ergot was hardly to be settled by statistics. It should first be ascertained what the physiological effect of ergot was, whether it did really induce a continuous contraction of the uterus after delivery. It was too much asserted that forceps should be used in some definite proportion of cases, without regard to varying circumstances.

Dr. BARNES was astonished to hear, as to the sexes of twins, that they were of the same sex in separate amnial sacs, and the converse. The rule derived from general experience was precisely the reverse. It might be compared to the case of the relation of hemiplegia to brain disease on the opposite side, in which, though one might see exceptions, one would rather disbelieve one's own observation than distrust the general law.

Dr. GALABIN said, with reference to the sex of twins, that he had collected all cases of which particulars had been recorded during twelve years of the Guy's Hospital Lying-in Charity. Among them were found all possible combinations, both of single and double placentæ, and single and double amnial cavities, associated both with children of the same, and children of opposite sexes. Although the fact that double monsters are always of the same sex might lead one to expect that the same might hold of all twins in the same

amniotic cavity, he had not found this relation to be markedly more common than the opposite. It was therefore clear that at any rate either condition was possible.

Dr. GREEN, in reply, said that the proportion of sexes was stated accurately, and only two of the children had been illegitimate. With reference to idiocy, he could speak only from his own observation; but in most cases he had kept the children under his observation. The death after forceps occurred rather because he had not been sent for soon enough. After trying ergot for a number of years he had never found any good from it, but rather harm. On the other hand, he gave it with good results to avert a threatened miscarriage. As to the frequent use of forceps, it often happened that patients objected, and he was not able to employ them as often as he might wish. Among the premature children, all were reckoned who were over three months, and short of full time.

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*The Forceps in certain Breech Presentations.*

By T. W. AGNEW, M.D., Hobart Town, Australia.

The author had remarked that in a recent discussion in the Society on the use of the sling and blunt hook in breech presentations, no mention had been made of the use of the forceps in such cases. Dr. Barnes declared that he always succeeded with the hand in bringing down a foot, but all were not so skilful. As to the danger to be feared from the use of forceps, it was a choice of evils, when there was an impacted breech presentation at full term. The use of the blunt hook was barbarous, and if an attempt were made to pass anything round the groin, or to introduce the hand past the breech, there was a danger of doing some injury, which might be a starting-point for septicæmia. The author had in two cases succeeded by means of Dr. Barnes's long forceps, which were not dangerous to the child, like the old ones. It was not necessary to introduce the hand in applying them.

In the first case, the patient was forty years old, stout, and the mother of several children. Labour had lasted fourteen hours, and the breech had been impacted at the vulva for several hours. The author applied the forceps without introducing the hand, and extracted the foetus with the aid of a considerable amount of swaying movement. The child had been dead some time, but there were no marks of injury from the forceps. In the second case the patient was a primipara, aged thirty-nine. After seven hours' labour the breech became fixed at the vulva, and there was no room in the vagina. The pains were becoming more and more ineffectual. The author again extracted by forceps in the same way, using a good deal of swaying. After the breech was released, there was delay in completing delivery, the funis became compressed, and the foetus died. There was no injury from the forceps.

Dr. BARNES thought that this was one of the few points in



obstetrics which might be regarded as settled. He had formerly made considerable trial in such cases of his own instrument, which Dr. Agnew praised, and had seen its danger and inefficiency. Among other dangers was that of catching and compressing the funis. The author was right in making oscillations, if forceps were used at all. It was a serious defect in the report that it was not stated what was the position of the legs and feet. There were two kinds of breech presentation, of which one was comparatively easy, and delivery might then be effected by forceps with tolerable facility. There was simple arrest, and not true impaction by a wedge. The real difficulty was in the other case, the exceptional one, when the feet were extended by the side of the head, and a wedge formed, which was too large to pass. Forceps could not get over this, but would only increase the wedging. The wedge was at once broken up by bringing down a foot. The operation was not easy, but was one of the most difficult in midwifery. But we must follow the principles of science, and it was impossible to lay down rules which all the incapable could carry out.

Dr. POOLE said he had found such cases extremely difficult, and in one instance it had proved impossible to carry the hand past the breech. He afterwards thought that he ought to have divided with bone forceps the symphysis pubis of the child, which was dead, and then extraction would have been easier.

Dr. BARNES said that, when the child was dead, the general principle was that anything might be done to it which would save the mother. But the difficulty was to know when the child was dead. He had often delivered children alive which had been supposed dead—even when the funis was felt to have ceased pulsating. If the death was only a presumption, he should prefer to bring down a leg.

Dr. HAYES mentioned a case of accidental hæmorrhage in which the patient was almost moribund. The membranes were ruptured, the os not fully dilated. Thinking immediate delivery required, in his haste he mistook a breech for a vertex, and put on forceps. After a little traction the blades slipped, but the presenting part descended. He then found the presentation to be breech, and brought down a foot. It would in this case have been difficult to introduce the hand into the uterus to reach a foot. The traction was more uniform when applied over both buttocks, and he thought it might often be useful to bring the trunk lower by forceps, and then the hand need not be introduced so high.

Dr. BARNES thought that Dr. Hayes had not appreciated the true mechanism of the case. The lower the child was brought, the more difficult it was to get the hand past. When the breech was still high it was comparatively easy, and he certainly should not try to draw it lower.

## OBSTETRICAL SOCIETY OF DUBLIN.

*Meeting, April 14th, 1877.*THOMAS DARBY, F.R.C.S.I., *President, in the Chair.*

Dr. ATTHILL showed a uterine hand spray for injecting perchloride of iron into the uterus, invented by Dr. Bernard, of Londonderry. It was drawn on to the fingers of the left hand, so that the tubes lay next the palm and between the fingers, and was fed through the medium of an ordinary elastic syringe.

Dr. KIDD showed a phosphatic calculus removed from the female bladder. Under chloroform, forceps were passed in through the urethra, a portion drawn out piecemeal, and remaining portions washed out afterwards, and passed next day through the urethra. Irritation continued, and about three months after another very much larger calculus was found; the operation was repeated in a similar way, and another mass afterwards extruded in micturition. Finally, the urethra was dilated, and the bladder thoroughly explored to make sure that nothing remained. There was no incontinence of urine for a moment.

Dr. MORE-MADDEN showed a calculus of oxalate of lime weighing 125 grains, which had been removed from the female bladder. It was extracted through the urethra with the ordinary forceps. Incontinence of urine followed for twenty-four hours, but gradually the power of retention returned.

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*On Transfusion in Post-partum Hæmorrhage.*

By LOMBE ATTHILL, M.D., Master of the Rotunda Hospital, Dublin.

Although *post partum* hæmorrhage is of common occurrence, deaths from this cause are now very infrequent. This fortunate result is, doubtless, due to the fact that the causes favouring or producing hæmorrhage after the birth of the child are now in general well understood, and the state of the uterus during the third stage of labour being carefully watched, hæmorrhage is either averted, or on its occurrence promptly arrested by the use of efficient means. Still deaths from hæmorrhage do from time to time occur, and, in spite of our boasted knowledge will, I fear, continue to do so. As an example, I give the details of the following case which terminated fatally, notwithstanding that every care was taken of the patient during labour, and every means employed to save life which experience could dictate.

A. K., aged thirty, was admitted into the Rotunda Hospital on Tuesday, the 6th February, at 1.30 A.M. She then stated that this was her eighth pregnancy; that she had come to her full time; that three days previously, namely, on the 3rd of February, about 9 P.M. the waters had escaped, and that since then she had suffered from

slight pains. The patient was aged-looking and anæmic ; and though she stated her age to be thirty, her appearance was that of a woman of forty ; still she complained of nothing except of slight pain in her back. On a vaginal examination (9 A.M., Tuesday, February 6th), the os was found to be soft and patulous, admitting the point of the finger easily. The presentation was so high as barely to be reached by the finger, and could not be made out with certainty. The pulse was quiet, the tongue clean, and the patient, thinking her labour had not commenced, wished to go out. This she was advised not to do. She had no pains during the day, and slept well that night. During the day following (Wednesday) labour advanced slightly. In the evening the cervix had disappeared, and the head could be made out presenting. At 10 P.M. she was ordered a draught containing 20 grains of hydrate of chloral and 20 minims of tincture of opium. On Thursday morning, February 8th, at 7 A.M., true labour pains set in ; at 2 P.M. the os uteri was nearly dilated, the lips were thick, and there was a very large caput succedaneum.

Labour now advanced rapidly, and at 4 P.M., the child was born. After an interval of twenty minutes, during which steady pressure with the hand was kept up on the fundus, the placenta was expelled entire. No hæmorrhage occurred, and the uterus being firmly contracted, the binder was applied. After the lapse of about half an hour, however, a stream of blood was observed trickling from the vulva, slight in quantity, but flowing continuously. The binder was consequently loosened, and the state of the uterus carefully examined. It was found to be fairly contracted, and the binder was reapplied. The oozing, however, continued. Dr. Hart was now summoned. He injected ergot hypodermically, applied firm pressure, and a clot was expelled. The little stream of blood, however, still continuing to trickle down, he injected cold water into the uterus, without obtaining any result ; the blood still trickled down just as before. The patient's condition now became alarming ; her pulse could hardly be felt, and she complained of feeling very weak. She was in this state when I saw her (5.45 P.M.), and, without any delay, we proceeded to inject a solution of the perchloride of iron, passing the tube up to the fundus of the uterus, and injecting about six ounces of a solution of the strength of one ounce of the strong liquor to four of water. This at once arrested the hæmorrhage, and no further loss occurred, though a watery discharge, small in quantity, was perceptible on the sheet. The patient's condition now improved, the pulse returned to the wrists, the feet and body were warm, and she expressed herself as feeling comfortable. There had not been any vomiting. Hot punch and beef tea were freely given and were retained. This satisfactory state, however, did not last long. On returning to the ward, after an absence of about twenty minutes, I found her almost in a state of collapse, from which the hypodermic injection of ether roused her but slightly. Seeing that her life must speedily become extinct, unless the vital powers could be invigorated,

I decided on trying transfusion, and sent for Dr. R. M'Donnell, who has, on several occasions, so successfully performed this operation, to aid us. He came promptly, and at about 7.45 P.M. the process was commenced—fifteen ounces of blood being willingly afforded by Mr. Gage, one of the intern pupils of the hospital. During the interval which elapsed, while the preparations were being made, the patient's condition had not altered, excepting in this that she vomited copiously and became cold. Still the case did not appear by any means hopeless. The vein was exposed by Dr. M'Donnell without much difficulty, and though flaccid was not absolutely empty of blood. The point of the tube, which conducted the defibrinated blood from the pipe, was quickly inserted into it, and the process of transfusion at once proceeded with. The blood entered the patient's vein freely, and almost entirely by its own gravity. So far, everything was satisfactory, but the favourable results we anticipated did not occur. The pulse did not return to the wrist, and the patient, instead of expressing any sense of improvement, became very restless and complained of great distress and of pain in her chest. The whole quantity of blood contained in the pipette slowly passed into the patient's system, and we continued to hope that, after a short interval, its beneficial effects would become visible, but in this we were disappointed. The restlessness and jactitation increased, and the breathing became shorter and shallower. Ether was again injected hypodermically with transient benefit, and brandy and water administered in small quantities, but in vain. She gradually sank, and died at 10 P.M., six hours after the birth of her child—two after transfusion had been effected.\*

A post-mortem examination was made twelve hours after death, by Dr. George Duffey, pathologist to the hospital, of which the following is a note :—

"On laying open the abdomen, the uterus was found to reach nearly to the umbilicus. There was slight vascularity of the peritoneum. The uterine walls were fully one inch in thickness, not infiltrated with either blood or serum, and quite firm. The cavity of

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\* The following are the details of the operation, as reported by Mr. Walter Ryan, who had charge of the case :—Dr. M'Donnell's transfusion apparatus consists of a glass cylinder capable of containing about fourteen ounces ; this at one end is drawn into a tube which tapers to a point ; the other end forms a larger tube, expanding into a bell-shaped mouthpiece. By means of this mouthpiece the cylinder is readily filled, the blood being sucked into it by the operator ; when full, the thumb placed on the mouthpiece prevents the escape of the fluid from the lower tube. To this latter a piece of india-rubber tubing about the thickness of a quill is attached, which at its centre expands into a small bag about the size of a walnut ; pressure on this imparts a pulsatory motion to the flow of blood through the tube. To the other extremity is attached a silver canula, with a small aperture about one-ninth of an inch from its end. Through this hole, when the *point* of the canula has been introduced into the vein, any contained air escapes, and when the blood is also seen to escape through it, the canula is pushed into the vein without danger of admitting air into it. Dr. M'Donnell having exposed the vein by a transverse incision, passed a tenaculum beneath it, and, pinching up the external coat with a



the uterus contained a large quantity of black fibrinous shreds and coagula, some of which were firmly adherent to the mucous membrane. On the posterior wall of the fundus was an elevated sessile mass, about the size of a crown piece. It could only with difficulty be separated from its attachment, and resembled an altered blood-clot or fibrinous mass, which had partly undergone fatty degeneration. The right lung was healthy, with the exception of slight and easily broken-down pleural adhesions. The left lung was so extremely adherent that it was impossible to remove the lower lobe without lacerating it. This portion of the lung was of a bright, glistening, red colour, studded with minute black points. It was non-crepitant. No plug was found in any of the larger branches of the pulmonary artery leading to it. There was a large quantity of fat on the surface of the heart. Its cavities were empty, and their walls extremely pale and flabby. To the naked eye the cardiac muscle seemed to be in a state of fatty degeneration. The walls of the right ventricle were markedly attenuated."

This case raises several questions of interest and importance. Among these are the following, to which I propose specially to direct attention :—

1. To what causes are we to attribute the hæmorrhage in this case, every care having been taken to prevent its occurrence, the uterus having contracted firmly after the expulsion of the placenta, and the relaxation of that organ, which occurred subsequently, being only to a limited degree?

2. Was the injection of the styptic delayed too long?

3. To what was the distress which followed the transfusion due?

4. Was the transfusion not only a failure so far as its beneficial effects were concerned, but may it not have had a positively injurious effect?

5. And if so, how can such for the future be guarded against in similar cases?

1. In reference to the first point, the previous history of this poor woman is of much importance. She had given birth to seven

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forceps, carefully slit it up. The canula was now introduced as far as the aperture previously mentioned, and the cylinder being raised above the patient's arm, the blood was allowed to flow by its own gravity, and when it appeared at the hole in the canula, the latter was pushed well into the vein. The blood now flowed steadily into the arm, being occasionally hastened by the operator blowing through the mouthpiece above. The operation lasted about ten minutes. When the cylinder was almost empty, the thumb was placed on the opening in the vein, the canula withdrawn, and a pad and roller applied. I should mention that during the operation the patient's respiration became heavy and of a groaning character, and from the time of the operation till her death, a period of two hours, she was extremely restless and complaining of great thirst. Respirations were thirty-six per minute. Subsequent to the operation no difference was perceptible in the pulse except after the injection of 25 min. of sulphuric ether, when for a moment it became stronger, but could at no time be counted. A teaspoonful of brandy and water was given every five minutes. The patient, however, never rallied, and expired quietly at 10 P.M.

children, five of whom were alive. Shortly before her admission into hospital her husband knocked down and injured a child while driving a van. He was arrested and committed to gaol, she and her five children being thus deprived of the means of support. For some days previous to her admission she had been without proper nourishment. Whether or not as a result of a shock caused by her husband's arrest was not ascertained, but certain it is that the membranes ruptured prematurely, and that the waters drained away before she was admitted into hospital. As a consequence, the first stage of labour was very tedious, and was protracted over several days, during which she brooded over the condition of her children, the youngest not two years old, absolutely destitute of food, and without any one to care for them. Here, I think, we have a clue to the cause of the hæmorrhage in this woman—impoverished blood, due to the want of food (perhaps, also, to the existence of previous thoracic disease), and an exhausted condition of the nervous system, the result of extreme mental depression. The nerve-force was exhausted, therefore the uterus failed to continue firmly contracted, while the blood, being deficient in fibrin, did not coagulate in the uterine vessels, for, as Dr. Barnes points out, by means of the formation of clots in these vessels, "many women are rescued, to all appearance, from imminent death, after the most profuse and uncontrollable floodings."\* The conditions I have here pointed out as being, in my opinion, the chief causes of the fatal hæmorrhage which occurred in this case, are not dwelt on in any of the systematic works on midwifery in general use. Doubtless, they are recognised by Barnes and others, but mentioned in so vague a manner as to be altogether undeserving of their real importance. The only writer who makes special reference to them is Dr. M'Clintock, who, in his admirable Annotations, appended to the new edition of "Smellie's Midwifery," edited by him, points out these as favouring the occurrence of post-partum hæmorrhage. At pages 387-8 he says—"A third condition there is whose influence must not be altogether ignored, and that is the coagulable power of the blood itself;" and "I have frequently had occasion to observe that extreme mental depression, whatever may be its cause, can exert a paralysing influence upon the uterus." I may here state that, according to my experience, cases such as that I have just detailed, in which a small stream of blood trickled away constantly, though not so alarming in appearance, are far more difficult to treat than those in which profuse hæmorrhage occurs immediately after delivery.

2. That this was a case in which the injection of the perchloride of iron was justifiable, will, I think, be admitted by every impartial reader. Cold had failed to produce any effect; in fact it had only rendered matters worse. Ergot, &c., had been administered in vain. The hand, certainly, had not been introduced, because such a pro-

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\* "Lectures on Obstetric Operations," p. 455.

ceeding did not promise to be productive of good, for the uterus was fairly contracted, and it was quite evident that there were not any clots in it. Clearly, the stream of blood that slowly but continuously trickled from the vulva must be stayed, or life must soon ebb away, and no means for effecting this remained except the injection of a styptic. For the first time in my experience of the use of this agent, not a very limited one, it failed to save life. I ask, should it have been practised earlier? The result, I believe, proves that it should; but then we did not, at that time, anticipate the result; and acting on the rule, in my opinion injudiciously laid down, not to inject a styptic for the purpose of arresting hæmorrhage "*till the means usually employed for that purpose have failed,*" we in this case delayed too long. I take this opportunity of repeating, what I have on a previous occasion stated before this Society, that I have not once had cause to regret injecting the perchloride of iron in cases of post-partum hæmorrhage. While this is the second occasion on which I have had to regret delay in its use, it should be observed that in this case the hæmorrhage was not only arrested but that the patient rallied for a time after the injection. The styptic did its work, but the vital powers had sunk to too low an ebb for life to be saved. The conclusion forced on my mind—that this patient's life might have been saved by an earlier recourse to this treatment—is the first of the practical lessons to be deduced from this case.

3. The post-mortem examination, while failing to account positively for the distress from which this patient suffered while the transfusion was proceeding, revealed two facts of great importance—namely, the existence of disease of old standing of the base of left lung, and of a fatty condition of the heart. With respect to the former, I think it is a fair inference to suppose that notwithstanding the care taken by Dr. M'Donnell in defibrinating the blood, a minute particle of fibrin may have passed through the right heart, to become the cause of obstruction at a point where previous disease had existed, the result being infarction of the lung tissue there, and that to this the symptoms were due.

4. The condition of the heart also was most unfavourable to a successful result. This has been pointed out by Professor Cesare Lombroso. In a memoir on transfusion he gives the details of forty-one cases in which the operation was performed, and states that in individuals with atheroma or fatty heart it is specially dangerous. His results, indeed, are not very encouraging, for out of his forty-one cases in eight the operation was injurious, and in two death followed; but then it should be borne in mind that it was practised in several instances on unsuitable subjects—namely, on patients suffering from various forms of chronic disease, such as leukæmia, anæmia, uræmia, and madness, and that he adds that the results were far more favourable in cases of parturient or traumatic hæmorrhage than in any others. Still, I think, with the facts now before us, the symptoms exhibited by the patient being taken into connexion with the post-

mortem appearances, it can hardly be doubted that in this case death, which was previously inevitable, was accelerated by the operation.

5. The inference to be drawn from the foregoing facts is clearly this—that transfusion is not a perfectly harmless proceeding, and that we should, if possible, before undertaking it, satisfy ourselves that the patient is free from any disease of the lungs or heart, but this is not always an easy matter; we are generally called on to perform the operation on the instant, on patients of whose previous history we are most likely ignorant, and in whom, on account of her exhausted condition, a satisfactory examination of the state of the lungs and heart is nearly impossible; still the attempt should evidently be made, and the operation should not, in my opinion, be undertaken if we have reason to suspect the existence of disease of either the lungs or heart.

In conclusion, I wish to point out that the condition of the uterus, as revealed by the autopsy, altogether negatives the statements that when perchloride of iron is injected into the uterus it enters the veins; the uterus contained “black fibrinous shreds, some of which were firmly adherent to the mucous membrane,” but in no place was there the slightest discoloration of the uterine walls subjacent to the mucous membrane, or any trace of iron in the uterine veins.

Dr. M'DONNELL did not think that the cause of the distress felt by the patient was the transfusion, or that this distress accelerated the fatal issue. In other cases he had observed nothing of the kind. He had once transfused in the case of a girl suffering from tetanus, who was dying from starvation. She had no distress, and described the sensation as agreeable. Nor could the infarction of the lung be due to embolism, for the blood was not only defibrinated but strained, and the time was also too short for such an effect to have been produced. As to the efficacy of defibrinated blood in transfusion, in four, out of a very considerable number of cases in which he had performed the operation, the result was brilliantly successful. In none was there any ecchymosis or purpuric spots. It was now known that fibrin was not an important element in the blood plasma, but was rather excrementitious. Dr. M'Donnell then exhibited and explained the instrument he used for transfusion.

Dr. HENRY KENNEDY had seen similar cardiac distress occur in fatal hæmorrhage when no transfusion had been performed. He mentioned an experiment on a dog in which, after bleeding, the animal seemed to revive from the injection of tepid water, though it did not eventually recover.

Dr. M'CLINTOCK thought the result of this operation anything but encouraging as to transfusion. The cases published by Dr. Braxton Hicks showed similarly bad results. In very few instances could it be said with certainty that recoveries after transfusion were *propter hoc*, for he had seen patients recover after hæmorrhage, when there had not seemed the slightest possibility of their doing so. In this case



the application of the most advanced science throughout had failed to avert death. He attached much importance to depressing the head and thought also that the plan of placing elastic bandages on the limbs might be useful, as recommended by Professor Lesser.

Dr. KIDD said that the same plan had been described fully fourteen years ago by Dr. Wyse, of Middleton, County Cork. He had seen a good many cases of transfusion, and performed it himself several times, but never seen one successful. In most the patients were too far gone. He thought it was established that transfusion could be performed without any injurious result, and that it should be resorted to earlier. Dr. M'Donnell had established that the use of defibrinated blood was not contrary to scientific principle.

Dr. FINUCANE said that in 1855, when numbers of working men were out of employment, and their wives starved, severe hæmorrhage had been common at the Coombe Hospital. In one instance, recovery took place when it seemed hopeless.

Dr. ATTHILL said that Dr. M'Donnell had performed the operation with the utmost possible skill. He did not wish to discourage transfusion, and thought that in this case it hastened death only because the patient had a fatty heart and consolidated lung. To the same cause was to be attributed the distress which supervened upon the operation.

Dr. M'Donnell said that the difficulty of discriminating between *post hoc* and *propter hoc* applied to every treatment in these cases. The performance of the operation was often difficult, and the cold sometimes made the muscular coat of the vein contract on the eye of the instrument.

## Obstetric Summary.

### *Gastrotomy for Extra-uterine Fætation.*

Dr. Heywood Smith records a case of extra-uterine fætation in which primary gastrotomy was performed with a fatal result to the mother and without saving the child. The patient was thirty-two years old, married thirteen years, and had had three children, the last nine years ago. She became an outpatient at the Hospital for Women, October 16th, 1876. Catamenia had then been regular until three months before, since which time there had been a coloured discharge nearly every week. The cervix was found swollen, and some undefined body was felt to the left of the uterus. It was thought to be a case of enlargement of the body of the uterus toward the left, with hyperæmia of the cervix. There was rather obstinate vomiting, with pain in the epigastrium, and rather severe pain in the rectum. Early in January, 1877, pregnancy was diagnosed, but

no special feature seemed to point to extra-uterine pregnancy. Labour pains set in, and she came into the British Lying-in Hospital on May 15th, but as the pains passed off, the matron, thinking they were spurious, sent her home again. On the 22nd she was again admitted.

The os uteri was then found to be situated high up behind the right horizontal ramus of the pubes; it was patent, and the finger could be passed up to the inner os, which was closed; on pressure the tip of the finger could be just inserted into the inner os, but no presentation could be discovered. Immediately behind the cervix was felt a hard, round mass, as of a foetal head, and behind that in the recto-vaginal pouch, a tense, tough mass, not irregular. The abdomen felt as in ordinary pregnancy, the parts of the foetus not being abnormally distinct. The foetal heart was heard distinctly about three inches below and to the left of the umbilicus, and the placental thrill over the lower aspect of the abdomen, especially to the left. A swelling, supposed to be the uterus, was felt above the pelvic brim on the right; the sound passed three and a half to four inches into the uterus. The diagnosis made was extra-uterine foetation, with the child lying with its back against the mother's abdomen.

A consultation being held, Dr. Priestley was adverse to any operation. Mr. Spencer Wells, however, thought that it would be advisable to operate, having regard partly to the interest of the child.

The operation was performed on May 25th by Dr. Heywood Smith, Mr. Spencer Wells assisting. When the cavity of the peritoneum was opened, the omentum presented at the upper part of the wound, having some gelatinous masses in its substance. The rest of the wound exposed a somewhat dense sac, that of the foetus having a greenish yellow colour. As a portion of the sac toward the right and upper part seemed to bulge with fluid, in order to draw off the liquor amnii, and if possible prevent its escape into the peritoneal cavity, a trocar was inserted, but only blood issued from it, and it was found to have wounded the placenta.

An incision was then made slightly to the left of the median line, and the rest of the sac torn open; the child's left arm was at once discovered and drawn out, and the foetus was then seized by the nape of the neck, and rapidly extracted. The extraction of the child further interfered with the placenta, lobes of which were found on both sides of the wound in the sac, and severe hæmorrhage was the result. A ligature was then passed round the torn mass of the placenta, and the portion cut off. The wound was closed with carbolised silk sutures, the edges of the sac being included, so as to bring them into opposition with the abdominal wound; a glass drainage was passed into the sac and secured, together with the funis, at the lower angle of the wound. The child at first showed

signs of life, and the heart beat for about forty minutes, but, though every effort was made to excite respiration, it was without success. The child was fully developed, a male, but was not very fat.

The patient suffered from vomiting during the night. At 8.30 A.M. on the 26th she became somewhat suddenly faint: the pulse rose to 145, and became very feeble. On being sent for, Dr. Heywood Smith found the bandages soaked with bloody fluid. Much fluid also welled up through the drainage-tube, but no considerable amount could be withdrawn with a syringe. Dr. Heywood Smith refrained from opening up the wound, not considering that the patient's strength would bear it, and she died at 12.5 P.M.

At the autopsy, the sac was found to contain about one-third of a pint of blood and clots: outside the sac, in the cavity of the peritoneum, there was nearly a pint of bloody serum. The sac consisted of a somewhat thickened tissue, rather more than  $\frac{1}{8}$  inch thick, covered externally with shreds of lymph forming adhesions to the omentum and portions of the intestines. The adhesions were not strong, except at one place low down posteriorly to a portion of intestine between 2 and 3 inches. The body of the uterus measured  $1\frac{3}{4}$  inch, the cervix 2 inches in length. The decidua was complete, about  $\frac{1}{4}$  to  $\frac{1}{2}$  inch thick, and separable from the uterus with care.

The right oviduct could not be traced for more than  $1\frac{1}{2}$  inch, as it seemed to become narrowed, and finally obliterated. The left oviduct was almost impervious at its uterine end, but thence was easily exposed and laid open for its whole length—3 inches—until its extremity was lost in the placental mass. The placenta was made up of about five distinct lobular masses, which the author regards as the developed fimbriæ of the oviduct. The funis was attached low down on the right side, just behind the lower part of the body of the uterus.

The author now thinks that, taking into consideration that the period of term had been passed, Dr. Priestley's opinion was a sound one, and that the operation ought not to have been performed. He concludes with the following deductions:—

1. That in cases of extra-uterine foetation, where the patient's health is good, and the child is alive, the operation should be performed just before or at term.

2. That the surface of the sac should be carefully examined prior to its being opened, so as to avoid wounding the placenta.

3. That, although in the majority of cases, where the placenta is fixed to the pelvic wall, no attempt should be made for its removal, yet where the whole ovum is complete in itself, and appears possibly structurally disconnected with the pelvis, it might be advisable to remove the whole sac including the placenta, ligaturing the pedicle as in ovariectomy.—*American Practitioner*.

*The Mechanism of Development of the Rachitic Pelvis.*

In an article on the causes which lead to the formation of the special shape of pelvis usual in rachitis, Dr. Fehling controverts the view maintained by Litzmann, and in Britain by Dr. Matthews Duncan, according to which its main characteristics are explained by the action of mechanical forces. Thus it has been considered that the projection of the promontory of the sacrum is due to the direct action of the weight of the body acting downward through the centre of the sacrum, while the surfaces of junction between the bodies of the sacral vertebræ and their lateral masses are morbidly softened. Again, the comparative increase of the transverse diameter of the rachitic pelvis has been ascribed to the action of the sacro-iliac ligaments, by means of which the weight of the body is suspended from the ilia, and a leverage so exercised tending to force the anterior ends of the iliac bones outwards, the fulcrum being their articulation with the sacrum. The author contends that this mechanism is insufficient, since not only is the shape of the pelvis altered, but the mean value of all its diameters is diminished, and also the dimensions of the individual bones. He points out that no one has ever attributed the difference in shape between the male and female pelvis to mechanical causes, and that the distinction between them affords a proof how important is the influence of the inherent forces of development in the bones themselves. Against the theory of the leverage action of the sacro-iliac ligaments in widening the pelvis, he brings forward some observations by himself, and others by Litzmann, on cases of congenital rachitis in new-born children, in which there was found to be already not only a proportionate increase of the transverse diameter, but an undue projection of the promontory of the sacrum. Instances of the simply flat pelvis have also been found in new-born children. Within the uterus, he argues, it is utterly impossible that any mechanical forces, dependent upon gravity, could have had any influence.

Dr. Fehling's own view is that both the average diminution of size, and the altered proportions of the pelvis, are due to the incomplete development of the bones which results from rachitis, such incomplete development affecting the different bones in different degrees. He publishes a series of curves, founded on the measurement of a large number of pelves at different ages, including normal, rachitic, osteo-malacic, uniformly contracted, and simply flat pelves, and representing graphically a more or less exact relationship between the different diameters of the pelvis, and certain dimensions of the individual bones which compose it. Thus the transverse diameter is shown to vary nearly with the distance between the posterior superior spines of the ilia, and the true conjugate diameter with the size of the ilium. In a third table is shown the percentage of the circle of the pelvic brim, which, in the different varieties of pelvis, belongs to the three bones, sacrum, ilium, and pubes. It appears that, both in rachitic and in simply flat pelves, the



proportion which belongs to the ilium is greatly diminished. Dr. Fehling therefore argues that the relation between the size of the conjugate diameter and the development of the ilium being shown, the relative increase of the transverse diameter in these two forms of pelvis is sufficiently accounted for, and that it is unnecessary to seek an explanation in mechanical causes, which would not, he believes, produce the effects ascribed to them.—*Archiv für Gynäkologie*, B. xi. H. 1.

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*The Mechanism of Obliquely Distorted Pelves.*

In the *Archiv für Gynäkologie*, B. xi. H. 1., Professor Gusserow describes four cases of obliquely contracted pelves, and draws some conclusions as to the mechanism of oblique distortion in general.

The first case was observed only during life. The patient was an Italian, 39 years old, pregnant for the first time. Her gait was strikingly lame, in consequence of an apparent shortening of the left leg. Both legs, however, were actually equal in length, measuring 73 cm. from the trochanter. The left trochanter was displaced upwards and backwards, and was unduly prominent. The left leg was somewhat atrophied, but perfectly movable at the hip. The diagnosis was that of congenital dislocation of the left hip, with the formation of a false joint. In standing and walking the patient rested firmly on the soles of both feet, but it was obvious that the weight of the body rested chiefly on the left side of the pelvis. On examination, the left side of the pelvis was found to be contracted, the promontory of the sacrum being nearer to the left side, and the symphysis pubis displaced towards the right. The spines of the vertebræ showed a deviation to the right in the lumbar region. The pelvic measurements gave distinct evidence of oblique distortion, the most characteristic differences being the following:—Right anterior superior spine to left posterior superior spine, 20·5 cm.; left anterior superior spine to right posterior superior spine, 21 cm.; right anterior superior spine to right posterior superior spine, 17 cm.; left anterior superior spine to left posterior superior spine, 16 cm.; right posterior superior spine to left tuber ischii, 22 cm.; left posterior superior spine to right tuber ischii, 20 cm.

Labour came on spontaneously at full term, and, at the rupture of the membranes a loop of the funis became prolapsed. The assistant physician attempted to perform version, but did not succeed, although the head was movable above the pelvic brim, apparently on account of the intensity of the uterine action. The funis was then successfully replaced. When Professor Gusserow saw the patient, the head had made no further advance. Notwithstanding vigorous pains, the foetal heart could no longer be heard, and the woman seemed much exhausted, her temperature being 39°·2 C. He at once performed craniotomy, and then extracted the foetus by means of the crotchet, fixing it first in the base of the skull, and afterwards in the right orbit, so rotating the whole cranium into the right or more capacious side of

the pelvis. He remarks that since learning the use of the crotchet in England in 1867, he has never employed the cephalotribe, and considers that, if the hand be introduced to shield the soft parts, there is no danger of any injury being done by the slipping of the former instrument. The recovery of the patient was almost uninterrupted. As to the mechanism of distortion, the author remarks that in this instance the diseased side of the pelvis was contracted, and at the same time displaced upwards, as it is in distortion from disease of the hip-joint when the patient has been able to use the limb. If, on the contrary, the person has not been able to rest upon the affected leg, the opposite side of the pelvis bears most weight, and therefore becomes contracted, as in instances recorded by Litzmann.

The next case considered by the author is that of a pelvis dating from 1826, and previously described in the catalogue of Stein. In this there is evidence of coxitis on the right side; a false acetabulum is formed above the normal position, large and shallow, rough and destitute of cartilage. It is stated by Stein that the neck of the femur had disappeared, and that its head was ankylosed to the pelvis, but the femur is now wanting. The anterior faces of the lumbar vertebræ are strongly rotated to the right, and the whole right side of the pelvis is displaced upwards. The right wing of the sacrum and the right ilium is atrophied, and thus the whole right side of the pelvis is considerably contracted. The author remarks upon this that the scoliosis of the lumbar vertebræ to the right shows that the weight must have been borne chiefly upon the right or diseased leg, and that therefore this leg could not have been disabled from use for any considerable time, and that, in accordance with this, it is the diseased side of the pelvis which is contracted and displaced upwards.

The third pelvis is one in which there are a number of united fractures on the right side of the pelvis, passing through the wing of the sacrum, the ischium, acetabulum, and both rami of the pubes. The pelvis is adult and probably male. The following are the alterations in the shape of the pelvis. There is no flexure of the spinal column. The promontory of the sacrum is much displaced to the right by bending of the right wing of the sacrum, and flattening of the right side of the pelvis towards its anterior part. The right side of the pelvis is displaced upwards as much as 3 cm., but not at all backwards. The right oblique diameter is 14.0 cm., the left oblique 12.5 cm.; there is no ankylosis of the sacro-iliac synchondrosis. The author concludes that the owner of this pelvis could not possibly have walked until the fractures were completely united, and that the effect of the weight transmitted through the spine may therefore here be eliminated. With this corresponds the absence of any scoliosis of the lumbar vertebræ. We have, therefore, here a good example of the pure effect of muscles in spasmodic action, chiefly the iliacus and abdominal muscles. The effects agree with those found by Kehrer in artificial fractures of the pelvis of animals.

The fourth pelvis is one with ankylosis of the left sacro-iliac syn-

chondrosis, and signs on the left side of the pelvis of an extensive abscess, affecting chiefly the acetabulum and ilium. There are two perforations in the ilium, and a large exostosis over the ankylosed synchondrosis. The history of the patient is uncertain. The pelvis is a youthful one, but the sex doubtful. The sacrum is rotated to the left, the bodies of the lower lumbar vertebræ very slightly in the same direction. The left wing of the sacrum is much atrophied, the promontory approximated to the left side of the pelvis, and the symphysis displaced to the right—the condition resembling that of the obliquely ovate pelvis in congenital ankylosis of the sacro-iliac joint. The author considers it probable that the ankylosis was due to the same disease as the abscess, and that the latter was so extensive that the patient could not have walked—a condition confirmed by the almost entire absence of flexure of the spine. In this case also, therefore, we have the effect of the action of the muscles in a spasmodic condition excited by the disease.

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*The Septic Influence of Lochial Discharges.*

In a treatise published at Giessen, Professor Kehrler describes a series of experiments undertaken in order to ascertain the poisonous influence of normal and abnormal lochial fluids at different periods after parturition. The lochial fluid was taken daily for from five to seven days after delivery, and its effect was tried in two different ways; first, by injection under the skin of rabbits, and, secondly, by inoculation of the parturient women themselves. The author arrived at the following results:—In all cases, even when the course of the puerperal state was perfectly normal, the lochial fluid injected into rabbits produced extensive inflammation and suppuration in the cellular tissue at and around the point of injection. In many cases the lochial fluid, even of the first day, produced diffuse phlegmonous inflammation, in others this was only produced by the lochia of the second or third day. The intensity of the effect increased in proportion to the time which had elapsed since delivery, within the limit of the period of observation; but it was not ascertained precisely when the maximum was reached, or when the poisonous quality had disappeared. The author concluded, however, that this would be the case when the discharge had become purely mucous. The later lochia of healthy puerperal women produced abscesses similar to those caused by putrid lochia in the earliest days. The constitutional disturbance associated with the abscesses increased in a similar ratio, in proportion to the date of the lochia. The diurnal temperature of the animals experimented upon showed a certain resemblance to that of the puerperal women in whom the lochiæ were putrid. The blood which flowed from the genitals immediately after delivery proved to be comparatively harmless when injected subcutaneously. One exception, however, to this rule occurred, a case in which a slough was formed at the point of injection, and the cellular tissue



beneath became infiltrated with pus. The author considered, however, that this might have arisen from some want of care in filtering the blood or making the injection.

The result of experiments by inoculation upon the puerperal women themselves was that the lochial fluid of the first and second day produced scarcely any reaction, only in some cases a slight appearance of inflammation. That of the third and later days, however, produced decided inflammation, but only of a slight and limited character, if taken from a healthy puerperal woman. The results of inoculation thus differed somewhat from those of subcutaneous injections in rabbits, in which normal lochia of the later days produced as acute an inflammation as putrid lochia. In cases where any puerperal disorder occurred, the inoculation produced a higher degree of inflammation, and this occurred, not only with putrid lochial fluid, but with that which, to the senses, did not appear other than normal, a fact which has great importance in reference to the etiology and prophylaxis of puerperal septicæmia. The first marked rise of temperature did not coincide in time with the appearance of this poisonous quality in the discharge, but in some cases occurred earlier, and in some later.—*Archiv für Gynäkologie*, B. xi. H. 2.

#### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

“Surgery, Past, Present, and Future, and Excessive Mortality after Surgical Operations.” Two Addresses to the British Medical Association, 1864 and 1877. By T. Spencer Wells, F.R.C.S. London: Churchill. 1877.

“Address in Obstetrics and Diseases of Women and Children, delivered before the American Medical Association.” By Samuel C. Busey, M.D. Philadelphia. 1876.

“Physiological Tables for the Use of Students.” Compiled by Edward B. Aveling, D.Sc., F.L.S. London: Hamilton, Adams, and Co. 1877.

“Des Hystéromes en des Tumeurs dites Fibreuses de l’Utérus.” Par N. S. Sevastopulo. Paris. 1875.

Communications received from Dr. Angus Macdonald, Professor Stephenson, Dr. Aveling, Dr. James, and Dr. J. Williams.

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THE EFFECTS OF A FREQUENT AND EARLY  
USE OF MIDWIFERY FORCEPS UPON THE  
FŒTAL AND MATERNAL MORTALITY.

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THE question of whether a frequent or a sparing use of forceps in midwifery practice is more desirable, and what are their relative effects upon the fœtal and maternal mortality, has within the last few years been repeatedly discussed in the Obstetrical Society of London and elsewhere. It has been urged by several very high authorities that the use of the instrument by practitioners in general is still far too infrequent, and that a great sacrifice of fœtal life is thereby produced. In support of this view, various statistics have been quoted as evidence that a large proportion of the general ratio of still-births—namely, one of between four and five per cent.—is preventible by a timely resort to forceps.

Thus, in the discussion in the Obstetrical Society of London on Dr. Cooper Rose's "Contribution to the Statistics of Midwifery in General Practice," showing a percentage of still-births of 3·2, or nearly 1 in 30, Dr. Playfair said: "Nothing is more remarkable in modern midwifery than the results published by Dr. Hamilton of Falkirk, which have not attracted nearly sufficient attention. In one instance he had

about 600 deliveries without losing a single child, and in another a series of 731, and he used the forceps in one out of every seven or eight cases. In the Rotunda Hospital at Dublin, where the practice was naturally the most skilful and scientific in the kingdom, the importance of an early interference was recognised, as the forceps were applied with a frequency which would have horrified the past generation, and with the most favourable result. If such figures even approximated to the truth, it was obvious that to a dread of early instrumental interference an immense amount of preventible infantile mortality might be referred." In a later discussion on the statistics of Mr. Godson, Dr. Playfair again said: "He had last year pointed out that a low ratio of forceps operations was associated with a high foetal mortality. He had then alluded to the remarkable results of Dr. Hamilton of Falkirk, who had two successive series of cases of 800 and 700, without a single still-birth." Further, in his annual address to the Dublin Obstetrical Society, in the year 1871, Dr. Kidd brought forward statistics by which he claimed that it was demonstrated that by the frequent and early use of forceps at the Rotunda Hospital, under Dr. G. Johnston, in comparison with the former practice, "a very important saving of infant life has been obtained—Dr. Clarke's loss being 53·005, and Dr. G. Johnston's 9·59—in addition to the saving of the mothers' lives, in consequence of the early use of the forceps—a further proof of progress." These statistics have attracted the more notice from the fact that they have been quoted at considerable length by Dr. Edis in an important paper on "The Forceps in Modern Midwifery," as demonstrating that an increase in the frequency of the use of forceps diminishes the maternal mortality, and also that the saving of foetal life attained by this means is still more striking. In the discussion on Dr. Edis's paper, Dr. Playfair criticised a sentence in the last Report of the Guy's Hospital Lying-in Charity, in which it was stated that although some of the children might have been saved by an earlier use of forceps, a general ratio of still-births of 4·06 per cent., and one of only 2·7 per cent. in vertex presentations, might be regarded as not unsatisfactory. "Surely," he

said, "comparing this with Dr. Hamilton's 1500 cases without a single still-birth, such a sacrifice of life ought to be prevented. In his own practice he had had only one still-birth—a syphilitic child—and he had saved at least eight lives by forceps."

Probably no one will doubt that in former days, through an excessive dread of having recourse to forceps except as a last resort, maternal lives were not unfrequently sacrificed, and fœtal lives in still greater proportion, through the relative frequency with which craniotomy was performed. It has been amply shown, however, that opinions differ very widely as to the safety or advantage of so frequent a use of forceps as some recent authorities have recommended, and it is therefore an important matter to settle whether it has really been shown by statistics that numberless children's lives are still sacrificed in the midwifery of the present day by an undue timidity in giving instrumental aid. It is obvious that the use of statistics for the solution of the question may be entirely fallacious, unless they are selected with extreme caution, and only used for comparison when all the circumstances are parallel. Thus, on looking at Table II. in the present paper, and finding that at the Rotunda Hospital, with 96·6 forceps cases per 1000, the total still-births were 6·1 per cent., and maternal deaths 22·0 per 1000; and in the Poliklinik at Munich, with 55·5 forceps cases per 1000, still-births were 8·6 per cent., and maternal deaths 14·6 per 1000; while, on the other hand, in the Guy's Hospital Charity, with only 5·1 forceps cases per 1000, still-births were 4·08 per cent., and maternal deaths 4·4 per 1000; and in the Royal Maternity Charity, with 9·1 forceps cases per 1000, still-births were only 2·7 per cent., and maternal deaths only 2·1 per 1000; one might at first sight be tempted to conclude that the frequent use of forceps is dangerous, not only to the mothers, but to the children. The very different circumstances, however, of the four institutions render any exact comparison between them impossible. The sources of discrepancy in such cases are extremely various. Thus differences of race as affecting the shape of the head, and differences of social condition as affecting the frequency of contracted

pelvis, may make great differences in the proportion of difficult labours. Again, the prevalence of syphilis in a population, or in any special class of it, modifies enormously the proportion of premature and still-births.

In the present paper I propose to bring forward certain tabular statements, compiled from various statistics which have been published, not so much as establishing any definite conclusion, as with a view to examine whether the conclusions from statistics, which have been drawn by others, are valid or otherwise. The tables have been prepared, with considerable expenditure of arithmetical labour, in such a form as to allow comparison at a glance between corresponding percentages in the different sets of statistics, as far as the details given will allow, which, as regards many points of interest, is unfortunately very imperfectly.

I will first deal with the most elaborate statistics which have been adduced, in proof of the great benefit to be gained, both for mothers and children, by a much more frequent use of forceps—namely, those of Dr. Kidd. Dr. Kidd starts upon the principle of limiting his comparison to the results obtained in the treatment of the special class of labours in which the question as to the propriety of using the forceps arises—namely, tedious and difficult labours. This comparison he makes as to the practice of the Rotunda Hospital under five successive masterships. These statistics are reproduced in Table I., with certain additions—namely, the total number of still-births per cent., and of maternal deaths per 1000. Certain other numbers are also added, calculated from those given by Dr. Kidd—namely, the proportion of still-births and of maternal deaths—not only to the number of tedious and difficult labours, but to the total number of deliveries. The numbers in the table not directly taken from Dr. Kidd's paper are derived from Dr. Kennedy's article on "Zymotic Diseases as more especially illustrated by Puerperal Fever," in the *Dublin Quarterly Journal of Medical Science*, vol. xlvii., and from Dr. Johnston's reports. The number 6·1, given under the heading of total percentage of children still-born, under Dr. G. Johnston, refers to the whole seven years of his mastership, while the



rest of the numbers in the column refer to the first three years of it alone. In the final column are added corresponding percentages from the statistics of the Guy's Hospital Lying-in Charity, in order to allow a comparison with the results of an institution of very different character.

TABLE I.

Rotunda Hospital.	Clarke. 1786-1793.	Collins. 1826-1833.	C. Johnson. 1840-1847.	Shekleton. 1847-1854.	G. Johnston 1868-1871.	Guy's Hospital Lying-in Charity. 1863-1875.
Number of deliveries . . . .	10,199	15,850	6634	13,748	3338	23,591
Cases of tedious or difficult labour, per 1000 deliveries .	17'9	13'2	39'0	37'3	81'2	...
Percentage of tedious and difficult labours completed without assistance . . . .	66'6	55'7	66'8	48'0	20'3	...
Percentage of tedious and difficult labours completed by forceps or vectis . . . .	6'55	6'66	13'13	32'69	75'28	...
Forceps or vectis cases, per 1000 deliveries . . . .	1'3	1'7	6'3	16'5	68'7	5'1
Craniotomy cases, per 1000 deliveries . . . .	4'8	5'0	7'9	7'2	3'6	0'7
Maternal deaths per 1000 after tedious or difficult labours .	202'1	147'6	84'9	60'3	73'8	...
Maternal deaths after tedious or difficult labour, per 1000 deliveries . . . .	3'6	1'9	3'3	2'2	6'0	0'8
Total number of maternal deaths, per 1000 . . . .	11'4	9'7	13'0	12'1	22'7	4'4
Deaths of children per cent. after tedious or difficult labour . . . .	53'0	53'8	46'3	32'6	9'5	...
Deaths of children after tedious or difficult labour, per 100 deliveries . . . .	0'95	0'72	1'8	1'2	'83	...
Total percentage of children still-born . . . .	...	6'5	...	6'9	(6'1)	4'08

The following will sufficiently indicate the line of demonstration put forward by Dr. Kidd, and adopted by Dr. Edis. Dr. Clarke completed only 6'55 per cent. of his tedious and difficult labours by forceps; Dr. Collins, only 6'66; Dr. Shekleton, 32'69 per cent.; Dr. G. Johnston, 75'28 per cent. The corresponding proportion of maternal deaths was, under Dr. Clarke, 202'1 per 1000; under Dr. Collins, 147'6 per 1000; under Dr. Shekleton, 60'3 per 1000; under Dr. G. Johnston, 73'8 per 1000. The corresponding proportion of children lost was, under Dr. Clarke, 53'0 per cent.; under Dr. Collins, 53'8 per cent.; under Dr. Shekleton, 32'6 per cent.; under Dr. G. Johnston, only 9'5 per

cent. Hence, the frequent use of forceps is inferred to effect a large saving of maternal, and an enormous saving of foetal, mortality. Now, it is obvious that this argument is invalid, unless the standard by which it is judged when a labour should be reckoned as tedious or difficult, is precisely the same in the different cases—a condition very difficult to secure when the observers are different. And it becomes evident that the condition is not secured, when we look at the table, and see that the proportion of tedious and difficult labours to the whole, which, under Dr. Clarke, was 17·9 per 1000, rises, under Dr. Shekleton, to 37·3 per 1000, and, under Dr. G. Johnston, to 81·2 per 1000. It is certainly possible that the proportion of tedious labours at the Rotunda Hospital may have increased of late years, but it seems scarcely credible that it can have done so more than four-fold. And on referring to the reports upon which the table of Dr. Kidd is mainly founded, the explanation becomes obvious without the assumption of any increase of difficult labours. Labours completed naturally are reckoned as tedious when they extend beyond twenty-four hours. But all forceps cases are also reckoned among tedious or difficult labours, and in very many cases under Dr. Shekleton, and in a still larger proportion under Dr. G. Johnston, forceps were applied long before labour had lasted twenty-four hours. Thus it is clear that the more frequently forceps were used, the greater would the proportion of tedious or difficult labours to the whole be made to appear. I think, therefore, there can be no doubt that Dr. Kidd's conclusion that Dr. G. Johnston had effected an enormous saving of infant life—having a loss of only 9·59, while Dr. Clarke's was 53·005—is absolutely fallacious.

The numbers may be made to tell apparently in the opposite direction, if the proportions of deaths of mothers and children to total deliveries, instead of to cases of tedious or difficult labour, be taken. Thus the proportion of maternal deaths after tedious or difficult labour per 1000 deliveries was, under Dr. Clarke, 3·6; under Dr. Collins, only 1·9; under Dr. Shekleton, 2·2; under Dr. G. Johnston, 6·0. The deaths of children after tedious or difficult labour per 100

deliveries were, under Dr. Clarke, 0·95 ; under Dr. Collins, only 0·72 ; under Dr. Shekleton, 1·2 ; under Dr. G. Johnston, 0·83. To estimate the results by these numbers would, of course, be equally fallacious in the opposite direction. It is remarkable, however, that this proportion of deaths of children under Dr. G. Johnston—namely, 0·83—is less than that under Dr. Shekleton—namely, 1·2—although a larger proportion of labours was included under the heading of tedious or difficult. This would seem to indicate a considerable real saving of infant life, although much less than that estimated by Dr. Kidd. Whatever, however, may have been the case during the first three years of Dr. G. Johnston's mastership, the total rate of still-births for the whole seven years in which he held that office—namely, 6·1 per cent.—does not seem fully to bear out this conclusion. It shows, indeed, an improvement as compared with the rate under Dr. Collins—6·5 per cent.—and that under Dr. Shekleton—6·9 per cent. ; but the difference is comparatively small, and the percentage still remains considerably above the average rate in England.

In attempting to draw any positive conclusions from the statistics, various circumstances are found which detract from their significance besides those already mentioned. Thus, one point for which allowance should be made, is that, with equal proportions of forceps cases, the practice may be somewhat different as to the time allowed to elapse before their use, or as to their application before full dilatation of the os or otherwise. This is a defect which cannot be obviated, and must impair somewhat the value of the comparison, but it applies only to ratios of forceps cases not widely differing from each other. For a very sparing use of the instrument, such as that in the Guy's Hospital Charity, or the Royal Maternity Charity, necessarily implies that labour is allowed to be protracted to a considerable degree without interference. And, on the other hand, there cannot be so frequent a resort to forceps as that in the St. Thomas's Hospital Charity, or in the practice of Dr. G. Johnston at the Rotunda Hospital, of Dr. Hamilton of Falkirk, or Dr. Playfair, unless the practice is that of early interference, for otherwise nature would anticipate the operator.

The comparison is also somewhat impaired by the absence of details as to the practice in the different cases as to the administration of ergot, either before resorting to forceps or as an alternative to their use. In this case, however, again the general rule will hold, that a frequent and early use of forceps implies a disuse or very rare administration of ergot. With a sparing use of forceps, however, there may be a considerable variety of practice in this respect, and this fact may have an important bearing upon the proportion of still-births.

I will next deal with the statistics of Dr. Hamilton of Falkirk, which have been so frequently mentioned. After the extracts which I have quoted at the commencement of this article, it may, perhaps, surprise some of my readers to learn that Dr. Joseph Clarke of Dublin, who, in 3847 cases in private practice, used the vectis only once, and the forceps not even once, while he performed craniotomy comparatively often, had a total ratio of still-births, excluding premature and decomposed children, smaller than that of Dr. Hamilton. Such, however, is the fact as regards Dr. Hamilton's first series of 300 cases—as to which alone sufficient details are given to allow of any comparison with the other statistics—the ratio for Dr. Clarke being 0·79 per cent., for Dr. Hamilton 1·0 per cent. It is also remarkable that while Dr. Hamilton attained a total ratio of still-births of 2·6 per cent., with 136·6 forceps cases per 1000, the ratio of still-births in the Royal Maternity Charity under Dr. Roper—namely, 2·7 per cent.—is very nearly as good, though his forceps cases were only 9·1 per 1000. With regard to the latter institution, however, some qualifications have to be taken into account which will be hereafter mentioned.

In quoting Dr. Hamilton's series of cases without a single still-birth, the fact has often been overlooked that he arrives at this result by a peculiar mode of reckoning, although this is clearly stated in each of his own papers. He excludes from the calculation all presentations other than vertex, all premature children, and all instances in which the child was believed to be dead when he took charge of the case. This mode of reckoning would doubtless be the best ground of comparison if the data could be ascertained, except for the



fact that there is notoriously a possibility of error in judging of the death of the fœtus before delivery. We have no corresponding numbers, however, in the other statistics with which to make a comparison, and it is clearly unfair to compare the result so reckoned with the total percentage of still-births elsewhere, of which, in many cases, considerably more than half were premature or putrid children, while a considerable proportion of the rest occurred in pelvic or other malpresentations.

The number of Dr. Hamilton's cases has also been somewhat exaggerated. In his first paper on the subject (1853) he reports, according to his mode of reckoning, 300 cases without a single still-birth, and states that he goes back to the 318th labour for a still-birth. The actual still-births among the 305 children were eight, of which in five the children were putrid, and of the other three, one was in a case of placenta prævia, one presented by the breech, and one *almost* certainly died before labour commenced. None of the children delivered by forceps were still-born. In a later paper (1861) he reports, in all, 731 cases without a still-birth, the 732nd child being still-born, the mother having had convulsions. Combining the two papers together, we may infer that, by his own mode of reckoning, Dr. Hamilton had two still-births in 733 consecutive labours, beginning and ending with a still-birth. The details of the first 300 cases, giving a total rate of still-births of 2·6 per cent., are included in Table II.; of the remainder of the 731 cases sufficient particulars to allow comparison are not given. In a still later paper, published in 1871, although he states that, since 1860, in all his own practice he has lost only one other child, in a footling case, and in all the forceps cases not a single child, Dr. Hamilton does not mention the total number of deliveries or of still-births.

These results, as regards the children, are undoubtedly very good, although not quite so startling as they have been made to appear, and it is therefore important to note the mode of using forceps to which the author attributes such a success. He does not advise the high forceps operation except in extreme cases, nor the application of the instrument before full dilatation of the os and its retraction, which

he accelerates by digital manipulation. But he insists that the second stage of labour should not, unless in exceptional cases, be allowed to continue more than *two hours* without interference. Dr. Hamilton uses Ziegler's straight forceps; as far as possible he never applies the first blade otherwise than over an ear, and he uses chloroform as seldom as possible.

The results to the mothers do not appear so favourable, although the number of cases is so small that this may be a casual circumstance. For the 300 cases the total death-rate is 10 per 1000—much greater than that in most of the other statistics; and the proportion of deaths after delivery by forceps per 1000 deliveries—namely, 6·6—exceeds even that of Dr. G. Johnston, and is more than six times as great as the corresponding ratio in any other case, with the exception of the Poliklinik at Munich. For the whole 731 cases the death-rate is somewhat more favourable, but is still high, for in these there were six deaths in all, and three after delivery by forceps, of which two are said to have been from non-puerperal causes. This gives a total death-rate of 8·2 per 1000, and a ratio of deaths after delivery by forceps per 1000 deliveries of 4·1. Thus, these figures fail to prove that so frequent and early a use of the forceps diminishes the risk to the mothers, or even that it does not considerably increase it.

With the results of Dr. Hamilton may fairly be compared those of Dr. Playfair, who applies forceps with not much less frequency. The success obtained by this distinguished obstetrician as regards the children's lives will probably be held a stronger argument even than that of Dr. Hamilton in favour of the practice which he has so earnestly advocated. The results have more than once been mentioned at the Obstetrical Society of London, and, by the courtesy of Dr. Playfair himself, I am able to state them more particularly. Out of 300 cases in which the head presented, and of which he had exclusive charge from beginning to end, excluding cases seen in consultation, he had three still-births, of which one was in a case of craniotomy, one a syphilitised foetus of three months, and the third in a case of induced labour at seven months. The forceps cases were 29, or at the rate of 96·6 per 1000.

Unfortunately I have not sufficient details to be able to include these statistics in the table, the total number of deliveries, the total number of still-births, and the results to the mothers not being stated. The number of still-births in vertex presentations is 1·0 per cent., which may be compared with 1·6 per cent. in the practice of Dr. Cooper Rose, with 7·2 forceps cases per 1000 ; 2·8 per cent. in the St. Thomas's Hospital Charity, with 61·8 forceps cases per 1000 ; and 2·7 per cent. in the Guy's Hospital Charity, with 5·1 forceps cases per 1000.\* The result is thus decidedly favourable, although the advantage of the high forceps-rate of Dr. Playfair over the very low forceps-rate of Dr. Cooper Rose is not perhaps quite so great as might be anticipated. It is to be remembered, however, that the total number of cases is somewhat small for comparison, and that a skilful accoucheur practising among the upper classes may be expected, under any circumstances, to attain much better results than the average. The latter fact may be illustrated by again recalling the case of Dr. Joseph Clarke, who, not using forceps once in 3847 deliveries, had a total percentage of still-births of 3·2, at a time when the percentage in the Rotunda Hospital was more than double as great, and a percentage of only 0·79, excluding premature and decomposed children, but including all presentations.

The best evidence of the effects of a frequent and early use of forceps is to be obtained by comparing the records of an institution in which, at different times, the practice with regard to instrumental assistance has widely varied ; for in that case most of the sources of error, such as those dependent on differences of race and social condition, are eliminated. Thus, the records of the Rotunda Hospital at Dublin are of great significance, and in Table II. will be found the comparative results of Dr. Collins with 1·7 forceps cases and 5·0 craniotomy cases per 1000 ; of Dr. Shekleton, with 16·5 forceps cases and 7·9 craniotomy cases per 1000 ; and of Dr. G. Johnston with, in the last four years of his office, 116·4

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\* In the St. Thomas's and Guy's Charities these percentages are increased by the fact that cases of placenta prævia with vertex are reckoned among vertex presentations.

forceps cases and 3·5 craniotomy cases per 1000. The corresponding percentages of still-births were, under Dr. Collins, 6·5 per cent. ; under Dr. Shekleton, 6·9 per cent. ; and under Dr. G. Johnston, for the whole seven years, 6·1 per cent.

All these rates seem very high, but it will be observed that in from more than a half up to nearly two-thirds of the still-births the children were premature or putrid, abortions at less than six months not being included. It is to be remembered, too, that an unusual proportion of difficult cases are admitted into the Rotunda Hospital, and it may be, also, that Irish foetal heads are more square or more incompressible than English or Scotch. Comparing Dr. Johnston with Dr. Collins, the total gain in the percentage of still-births is only 0·4 per cent. Taking, however, the percentage, excluding premature or putrid children, the total gain of Dr. Johnston over Dr. Collins is 0·8 per cent. ; over Dr. Shekleton, 0·5 per cent. Of the former 0·15, and of the latter 0·44, is accounted for by the disuse of craniotomy, probably in consequence of the adoption by Dr. Johnston of the long curved forceps. Apart therefore from the substitution of forceps for craniotomy, assuming that the children's lives were saved by such substitution, the advantage in the rate of still-births gained by Dr. Johnston in giving frequent and early assistance, appears as 0·65 per cent. compared with the excessively low forceps-rate of Dr. Collins, but only 0·06 per cent. compared with the moderately low forceps-rate of Dr. Shekleton, although forceps cases were multiplied more than fivefold. Such being the amount of gain in the percentage of still-births, I think it will appear to many that Dr. G. Johnston has taken somewhat too sanguine a view of the number of foetal lives preserved by his frequent and early application of forceps, especially when, in his last report, he says of the 102 children, out of 113, who lived after delivery by forceps, that they would, in all probability, have been lost if left to the natural efforts.

It is important to remember that Dr. G. Johnston, in the latter part of his mastership, adopted a practice very different from that of Dr. Playfair, who discourages the application of forceps at or above the brim, or before full dilatation of the



TABLE II.

	Rotunda, 1826-1833. Dr. Collins.	Rotunda, 1847-1854. Dr. Shekleton.	Rotunda, 1868-1875. Dr. G. Johnston.	Rotunda, 1871-1875. Dr. G. Johnston.	Guy's, 1854-1863.	Guy's, 1863-1875.	St. Bartholomew's, 1862-1868.	St. George's, 1854-1871.	St. Thomas's, 1874.	St. Thomas's, 1875.	Royal Maternity Charity, Eastern Division, 1875-1876.	Dr. Joseph Clarke, Dublin. Private Practice, 1803-1847.	Dr. Hamilton, Falkirk. Pri- vate Practice, up to 1853.	Dr. Lawrence, Montrose. Private Practice, up to 1863.	Mr. Harper, Private Prac- tice, 1837-1858.	Mr. Godson, Barnet. Pri- vate Practice, 1842-1869.	Mr. Godson and Partner. Conjoint Practice, 1869-1876.	Dr. Cooper Rose, Hampstead. Private Practice, up to 1875.	Poliklinik, Munich. Prof. Hecker, 1861-1865.
Number of deliveries . . . . .	15,850	13,748	7,830	4,507	22,498	14,871	23,591	5,734	5,575	14,75	14,38	3,847	300	1000	6053	2203	1020	1250	1987
Forceps (or vectis) cases, per 1000 Cases of craniotomy for difficult labour, per 1000 . . . . .	17	10.5	96.4	116.4	4.4	4.8	5.1	22.3	5.9	54.2	61.8	0.20	136.6	28.0	38.4	14.9	102.0	7.2	55.5
Number of still-births, per cent. . .	5.0	7.9	3.5	3.5	3.6	1.2	0.7	0.7	3.2	0.0	0.0	3.1	0.0	0.0	2.6	1.3	0.9	3.2	1.0
Still-births per cent., excluding decomposed and premature chil- dren . . . . .	6.5	6.9	6.1	...	4.9	4.6	4.08	4.8	4.4	4.06	3.94	3.2	2.6	4.5	3.4	5.2	5.1	3.2	8.6
Still-births per cent. in vertex presentations . . . . .	3.0	2.7	2.2	...	...	...	...	...	...	...	...	0.79	1.0	1.4	...	...	...	...	4.3
Still-births per cent. in forceps cases . . . . .	...	...	...	...	3.5	2.9	2.7	...	...	2.8	2.8	...	...	...	2.3	2.3	6.7	1.6	...
Still-births in forceps cases, per 100 deliveries . . . . .	...	11.7	4.9	4.8	13.1	17.9	23.3	6.6	...	9.5	5.6	...	0.0	14.2	12.1	6.0	6.7	0.0	20.7
Total maternal deaths, per 1000 . .	9.7	13.0	0.47	0.53	0.06	0.08	0.11	0.14	...	0.54	0.35	...	0.0	0.4	0.4	0.09	0.68	0.0	1.1
Deaths after forceps, craniotomy, or version for protracted labour, per 100 deliveries . . . . .	1.1	1.2	6.8	7.1	0.57	0.24	0.50	0.0	0.18	0.0	0.0	0.0	6.6	1.0	...	0.9	0.0	0.0	2.0
Deaths after delivery by forceps in tedious or difficult labour, per 1000 deliveries . . . . .	0.24	0.43	6.0	6.2	0.017	0.0	0.016	0.0	0.0	0.0	0.0	...	6.6	1.0	0.0	0.9	0.0	0.0	2.0
Deaths per 1000 after delivery by forceps in tedious or difficult labour . . . . .	166.6	35.7	63.5	54.4	43.9	0.0	33.3	0.0	0.0	0.0	0.0	...	48.7	35.7	0.0	60.6	0.0	0.0	36.3

os, except in very exceptional cases. Dr. Johnston, on the other hand, in his last four years of office, in more than a fourth of the cases applied forceps before full dilatation of the os, but on condition of its being dilatable. Of these, the head was at or above the brim in considerably more than half; and, in more than a third, the os was less than two-fifths dilated. I have therefore arranged in one column the results under Dr. Johnston for the whole seven years, and in the next column those for the last four years, taken separately. Unfortunately, the total rate of still-births is not mentioned in the annual reports, and it is therefore not possible to compare it before and after the adoption of the plan of frequently using forceps before full dilatation of the os. For information as to the rate of still-births for the seven years, I am indebted to the great kindness of Dr. Johnston.

It has been thought by many that the practice inculcated by Dr. Johnston, although it may be advantageous to the children, is yet dangerous to the mothers, or might become so in less highly-skilled hands. It is therefore of interest to compare the maternal death-rates. It will be observed that the death-rate, which, under Dr. Collins, was 9·7 per 1000, rose, under Dr. Shekleton, to 13·0 per 1000, and under Dr. Johnston, to no less than 22·0 per 1000. It is stated that puerperal fever did not at any time spread in the Rotunda Hospital during the mastership of Dr. Johnston, but the risks of septicæmia in lying-in hospitals are generally so grave that this increased mortality may well have had other causes, and be quite unconnected with the increased use of forceps. Probably it may depend upon some change in the class of patients admitted. It is also to be noted that the death-rate under Dr. Johnston was much better than during the period immediately preceding, for, from 1861 to 1867 inclusive, it was no less than 36·0 per 1000—a rate apparently due to the epidemic prevalence of puerperal fever; for, in 1862, the death-rate rose to 72·5 per 1000.

The number of deaths which occurred after the use of forceps may be considered more significant; and here it is

somewhat startling to find that the ratio of deaths after delivery by forceps in tedious labour per 1000 deliveries, which, under Dr. Shekleton, was 0·43, rose, under Dr. Johnston, to 6·0, or in a much higher proportion than the number of forceps cases. Again, the deaths per 1000 in such forceps cases themselves were, under Dr. Johnston, 63·5; while under Dr. Shekleton, although the use of forceps was reserved for much more extreme cases, there were only 35·7. The death-rate for the last four years of Dr. Johnston's mastership is less than for the whole seven years (19·3, as compared with 22·0), whence it might be inferred that the use of forceps before full dilatation of the os had, at any rate, no injurious effect upon the mothers. The average death-rate, however, was considerably raised by a high mortality in 1868, the first year of the seven; and, if we examine the individual cases, this conclusion does not seem to be quite so certain. In 88 cases, during the three years 1872, 1873, 1874, in which forceps were applied before full dilatation of the os, simply on account of premature rupture of the membranes—excluding all cases of complication, such as eclampsia, hæmorrhage, or prolapse of funis, and excluding also cases of disproportion—there were four deaths, which gives a mortality of 46·6 per 1000, more than double the average mortality. It may, perhaps, be doubted whether the increased risk to the mothers, from premature rupture of the membranes, would have led to a greater, or even so great, a mortality as this, if the cases had been left to nature.

Doubtless this is a case in which it is extremely difficult to distinguish between *post hoc* and *propter hoc*; and great importance should be attached to the conviction of so eminent an obstetrician as Dr. Johnston himself, that his practice of frequent and early interference has proved of great benefit to the mothers. Nevertheless, if his opinion is correct, it seems singularly unfortunate that the resulting death-rate is quite consistent with the view that such a practice seriously increases the maternal risks. At any rate, it must be said here, as in the case of Dr. Hamilton of Falkirk, that the figures do not prove that so frequent and early use of forceps

can be adopted without danger to the mothers, much less do they show that their risks are thereby diminished.

In the first year of Dr. Atthill's mastership, the forceps cases have been 56·3 per 1000, or rather less than half the rate during the last four years under Dr. Johnston, and in about one-fifth of the cases the os uteri was not fully dilated. The total death-rate was very high—namely, 33·4 per 1000—of which six-sevenths (30 out of 35) were due to peritonitis or some form of septicæmia. Unfortunately no mention is made of the total rate of still-births, or that after delivery by forceps, nor is enough detail given of the forceps cases to allow of comparison with the results of Dr. Johnston. There were six deaths after delivery by forceps in tedious labour, and three deaths in the cases (about twelve) in which forceps were applied before full dilatation of the os.

The statistics of the Guy's Hospital Charity show the comparative results since 1833, but display very little change of practice as to the use of forceps. In the first twenty-one years, forceps (or vectis) cases were 4·4 per 1000; in the next ten, 4·8 per 1000; and in the last twelve (up to October, 1875) 5·1 per 1000. The corresponding ratios for craniotomy are 3·6, 1·2, and 0·7 per 1000. Thus the total number of cases of operative interference in tedious or difficult labour has actually diminished from 8·0 to 5·8 per 1000. The total percentages of still-births in the three periods were 4·9, 4·6, and 4·08; the percentages in vertex presentations, 3·5, 2·9, and 2·7. Thus, taking the latter numbers, a total gain appears in the rate of still-births of 0·8 per cent., which is equal to the gain of Dr. G. Johnston compared with Dr. Collins. Of this 0·29 per cent. at most could be accounted for by the disuse of craniotomy, and there remains a gain of 0·51 per cent., the cause of which is not apparent, as it cannot be due to the slight increase, only 0·07 per cent., in forceps cases, but which would doubtless have been attributed to an increased frequency of interference if such a change of practice had occurred.

The death-rates for the last two periods, 2·9 per 1000 and 4·4 per 1000, are very favourable, and appear to show that an extremely sparing use of forceps is, at any rate, com-



patible with very good results to the mothers. This inference seems confirmed by the fact that, in the last twelve years, deaths after difficult or tedious labour, including cases of rupture of the uterus, and of septicæmia or hæmorrhage after protracted labour, were only 0·8 per 1000 deliveries. Nearly half of the whole number of deaths was due to septicæmia after easy labour, or to post-partum hæmorrhage, which was unusually common, the mothers being not unfrequently in a half-starved condition. The records of charities of this kind are always open to the suspicion that the death-rate may be under-estimated from some of the cases having passed out of observation before the end of the puerperal period. I believe, however, that in the Guy's Charity it is excessively rare for a patient to pass under other care while still suffering from the effects of parturition. It has been stated by Dr. Godson that, at St. Bartholomew's, the death-rate may be under-estimated from the cases not being fully followed out, and possibly the slightly higher death-rate in the Guy's Charity, compared with that given for other similar charities in London, may be due in some measure to greater care having been expended in securing the accuracy of the records.

Probably no one in the present day would consider such a low forceps-rate as 5·1 per 1000 to be desirable in private practice ; but in the Guy's Hospital Charity it is the necessary consequence of the rule requiring first the Obstetric Residents, and then the Assistant Obstetric Physician, to be sent for in all forceps cases. In most similar charities the Obstetric Residents are authorised to apply forceps on their own responsibility, and a much higher forceps-rate is naturally the result. A comparison between the two systems appears likely to afford better evidence of the effect of a frequent use of forceps upon the rate of still-births than even the records of the Rotunda Hospital, since the chance of error arising from a change in the character of the patients, or of an altered prevalence of syphilis over a long course of years, is eliminated. The comparison may best be made between the charities of Guy's and St. Thomas's Hospitals, since the districts are contiguous, the character of the population the

same,\* the management of the charities otherwise similar, but the forceps-rate at St. Thomas's fully ten times as great as that at Guy's. I have the materials for this comparison only for the years 1874 and 1875 at St. Thomas's, for which years the forceps-rates were 54·2 and 61·8 per 1000 respectively, as recorded in the reports of Dr. Cory. The result is somewhat surprising, for in 1874 the total still-births are 4·06 per cent., still-births in vertex presentations 2·8 per cent.; for 1875, total still-births 3·64 per cent., still-births in vertex presentations 2·8 per cent.; while at Guy's, for twelve years, the total still-births are 4·08 per cent., still-births in vertex presentations, 2·7 per cent. Thus, in vertex presentations, the advantage for both years is slightly in favour of Guy's. The better total percentage of St. Thomas's in the year 1875 appears to be due partly to a somewhat lower rate of presentations other than vertex, partly to a more successful management of such cases.

This want of any apparent advantage to foetal life from the frequent use of forceps cannot be ascribed to any want of skill on the part of the operators, for the Obstetric Residents are necessarily picked men among the students who have obtained qualifications, and, if any lack of skill existed, it would be likely to affect the mothers rather than the children. But the results to the mothers are extremely good, for no death occurred after delivery by forceps in the 2913 cases. A forceps-rate higher than 50 or 60 per 1000 necessarily implies that assistance is commonly given early, but it is probable that it may not have been usual to interfere quite so soon as recommended by Dr. Hamilton of Falkirk—namely, not later than two hours from the commencement of the second stage of labour. This may, perhaps, account for the apparent absence of any gain to the children, but possibly also for the good results to the mothers. On the other hand, it should be remembered that it has been already shown (p. ) that the practice of Dr. G. Johnston, who goes beyond Dr. Hamilton in early interference, applying forceps

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\* The preponderance of poverty, vice, and filth is, if anything, on the side of the patients of Guy's, since the district of the Guy's Charity contains some worse neighbourhoods than does that of St. Thomas's.

in a fourth of the cases before full dilatation of the os, appears to show a very slight gain to foetal life over the moderately low forceps-rate of Dr. Shekleton, apart from that due to the substitution of forceps for craniotomy.

From my own observation I cannot doubt that some of the still-births in forceps cases at Guy's might have been avoided by earlier interference, and it will be seen that the death-rate of the children, 23·3 per cent., in forceps cases is very high. Considering forceps cases only, however, the effect on the total percentage of still-births must be very slight, for if all these foetal lives had been saved, it would have diminished the percentage by only 0·11 out of 4·08.\* The very low proportion of craniotomy cases, 0·7 per 1000, also indicates that extraction was effected by forceps or version in many cases of great difficulty. The high forceps operation, the head being arrested at or above the brim, has been reserved for extreme cases, having been employed only when there was disproportion at the pelvic brim, and only twenty-four times in the 23,591 deliveries. When, however, pelvic contraction has been recognised, assistance has not been long delayed. The operation has not proved a dangerous one to the mothers, although of late it has been usual always to apply forceps first as the preferable operation in such cases, and to make trial, before resorting to version or craniotomy, of as much tractile force as a single operator can exercise steadily, by the aid of the knees rested against the edge of the bed, and assistants to make counter-pressure on the patient's buttocks. None of the mothers suffered any serious symptoms, and out of seventeen cases, during the last six years of the period, fifteen children were saved. The maternal deaths which did occur after delivery by forceps were in cases in which arrest occurred at a later stage, extraction was easy, but assistance was afforded perhaps scarcely soon enough. If it be

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\* A much greater number of avoidable still-births may be supposed to have occurred in protracted labours terminated naturally, but how far this is the case can only be judged by comparing the total rate of still-births, or, better, of still-births in vertex presentations, with that attained by the practice of frequent and early operative assistance.

assumed that all these lives were sacrificed to a too long delay in interference, the difference made to the total death-rate would be only 0·12 out of 4·4 per 1000.

In the other maternity charities of London hospitals—namely, those of St. Bartholomew's and St. George's—the same uniformity in the character of the population cannot be assumed, and the statistics are not given in the same detail. They do not, however, show any manifest advantage to foetal life from a more frequent use of forceps. At St. Bartholomew's, with a forceps-rate of 22·3 per 1000, the still-births are 4·8 per cent., considerably higher than at either Guy's or St. Thomas's. At St. George's, though the forceps-cases are only 5·9 per 1000, and the proportion of craniotomy cases much higher, the percentage of still-births is lower—namely, 4·4 per cent.

In the St. Bartholomew's Charity, the Obstetric Residents are authorised to use forceps on their own responsibility, and the frequency of the use of this instrument therefore depends chiefly upon the individual holders of that office. It is therefore of interest to compare the percentage of still-births and maternal deaths with the forceps-rate for each year; and in Table III. these numbers are given for the seven years, 1862 to 1868, inclusive. It is true that an increased number of forcep cases in any given year may have depended in part upon a greater proportion of cases of tedious or difficult labour having occurred, and not solely upon the practice followed by the Obstetric Residents of that year in giving assistance early or late. The same objection, however, applies equally to the comparison between statistics of private practice, involving a similar number of cases, and the hospital statistics have at any rate this important advantage that a great and unknown discrepancy in the social position and other characters of the patients, and in the prevalence of syphilis, is eliminated. It will be seen that there is no extreme variation in the forceps-rates to be compared, the highest being 34·8, and the lowest 15·5 per 1000. Within these limits, there is no apparent advantage to foetal life from the higher forceps-rate. The highest forceps-rate coincides with one of the higher still-birth percentages—



namely, one of 4·91—and the lowest with a somewhat lower still-birth percentage—namely, one of 4·6. The lowest still-birth percentage—one of 4·1—is associated with a medium forceps-rate—one of 24·3 per 1000. As to the maternal mortality, both higher and lower forceps-rates alike show an absolute immunity from any injurious effects, since no death occurred after delivery by forceps. The higher forceps-rates, however, do not show any improvement in the total maternal death-rate: and it so happens that the highest forceps-rate coincides with nearly the highest maternal death-rate, one of 5·6 per 1000, and the lowest with nearly the lowest maternal death-rate, one of 1·7 per 1000.

TABLE III.

St. Bartholomew's Hospital.	1862.	1863.	1864.	1865.	1866.	1867.	1868.
Total number of deliveries . . . . .	1039	889	815	829	577	695	890
Number of forceps cases, per 1000 . . . .	18·2	34·8	18·4	19·2	15·5	24·3	25·8
Number of still-births, per cent. . . . .	4·09	4·91	5·2	4·4	4·6	4·1	6·2
Total maternal deaths, per 1000 . . . . .	3·8	5·6	3·6	6·0	1·7	1·4	2·2
Maternal deaths after forceps or craniotomy, per 1000. . . . .	0·0	0·0	0·0	0·0	0·0	0·0	0·0

It will be observed how considerable is the variation without any obvious cause in the number of still-births in the several years—namely, one of from 4·09 to 6·2 per cent. We may hence infer that a number of deliveries not exceeding from 600 to 1000 is not sufficient to exclude large casual variations, and the value of inferences from many of the statistics of private practice as to the rate of still-births is thereby considerably impaired. The same argument will apply with still greater force to the maternal death-rate, in which much greater proportionate variations are observable.

The Eastern Division of the Royal Maternity Charity, under Dr. Roper, is, as usual, remarkable for the very low maternal death-rate, only 2·1 per 1000; and, more than usual, for the low percentage of still-births—namely, 2·7, although the forceps cases were only 9·1 per 1000. For the numbers given I am indebted to Dr. Roper, but, unfortunately, I have not the data for a more complete comparison. In reference to the results to the mothers, it is to be remembered that the rules of the charity exclude unmarried

women, who furnish an undue proportion of deaths in the Guy's Hospital Charity and elsewhere. It has been stated lately by Dr. Barnes, formerly physician to this charity, in reference to the advantage or otherwise of employing midwives, that many difficult cases are told off beforehand to medical men, and that premature births are almost entirely excluded. The latter circumstance doubtless has an important influence upon the percentage of still-births, and, in a measure, also upon the maternal death-rate.

It is highly satisfactory to find that the results of operative midwifery by qualified students in the charities of London hospitals are so extremely good. It will be noted that in the statistics tabulated no maternal death whatever after delivery by forceps is recorded except at Guy's, where, by the rule requiring the Assistant Obstetric Physician to be summoned in forceps cases, the giving of assistance is rendered more sparing and more tardy. So far there would seem to be some evidence in favour of the plan followed elsewhere. The total number of deliveries included is, however, much greater at Guy's; and in the preceding period of ten years no death after delivery by forceps occurred in 14,871 labours. There is therefore scarcely sufficient ground for a positive conclusion upon this point.

The statistics of the Poliklinik at Munich, under Professor Hecker, in which the patients are attended at their own homes as in the London charities, are introduced rather to show how different are the results of similar institutions, when the circumstances of race and social life are different. Although the forceps-rate is high, 55·5 per 1000, the rate of still-births, 8·6 per cent., is much higher than in any of the British statistics; and it is remarkable that the percentage of putrid and premature children alone—namely, 4·3, or half of the whole number of still-births—exceeds the total ratio of still-births in many of the other cases. The rate of still-births in the forceps cases themselves seems very high, being 20·7 per cent., which is exceeded only by that at Guy's, where forceps are reserved for more extreme cases, and used with less than one-tenth of the frequency. The rate of still-births in forceps-cases per 100 deliveries—namely, 1·1—is ten

times as high as that at Guy's, and far exceeds all the other corresponding ratios. The total maternal death-rate is also high—namely, 14·6 per 1000—which is exceeded only by the rate of Dr. G. Johnston. The proportion of maternal deaths in forceps-cases, 36·3 per 1000, somewhat exceeds that at Guy's, though the instrument was used so much more freely, but is surpassed by those of Dr. G. Johnston, Dr. Hamilton of Falkirk, and Mr. Godson. Probably these unfavourable results both to mothers and children are accounted for in great measure by the shape of the German foetal heads being more square than that of the English or Scotch.

The comparative results recently published by Mr. Godson of his own single practice up to 1869, and the conjoint practice of himself and partner after that date, afford a valuable ground of comparison, since the class of patients is here the same, and in the latter the forceps-rate is 102·0 per 1000, in the former only 14·9 per 1000. The high forceps-rate, however, gives a high percentage of still-births—one of 5·1, which is only 0·1 better than that in the single practice. The forceps-rate of Mr. Godson's partner, by himself, must have been something like 200 per 1000, higher than that of Dr. G. Johnston, Dr. Playfair, or Dr. Hamilton, and necessarily implying the practice of early interference. For the purpose of this comparison, it is unfortunate that the results of Mr. Godson and his partner are not separated in the statistics. This case, however, is important, as being the only one recorded in which a very frequent use of forceps shows favourable results to the mothers, so far as this can be judged from a number of cases presumably not much above 500. The death-rate in the conjoint practice is only 1·9 per 1000, that in the single practice being 2·7 per 1000; and, in the former case, no death occurred after delivery by forceps.

I have already referred to the records of Dr. Joseph Clarke of Dublin, who practised at the time when the prejudice against the use of forceps was at its height, and who, in 3867 cases in private practice, used forceps not at all, and the vertis only once, while the craniotomy cases were 3·1 per 1000. Notwithstanding this, his rate of still-births—namely, 3·2 per cent., and only 0·79 per cent. excluding putrid and

premature children—is wonderfully good, when compared with the ratio of still-births among people of the same race in the Rotunda Hospital. The maternal death-rate, however—namely, 5·6 per cent.—although not an excessive one, is not quite so favourable ; and it can scarcely be doubted that such an extreme reluctance to afford operative assistance must have seriously increased the risks to the mothers.

The other statistics from private practice included in the table appear to throw little further light upon the subject. Dr. Lawrence of Montrose, with a moderate forceps-rate, one of 28·0 per 1000, has rather a high total percentage of still-births—namely, 4·5. The percentage of still-births, excluding putrid or premature children, is, however, only 1·4, which is only 0·4 inferior to that of Dr. Hamilton of Falkirk. The maternal death-rate is 5·0 per 1000. Mr. Harper, who wrote in 1859 to advocate a more frequent recourse to forceps, has a forceps-rate of 38·4 per 1000, which would not now be regarded as a very high one. The total percentage of still-births is rather low—3·4 per cent. ; but the percentage of still-births in vertex presentations, 2·3, is 0·7 worse than that of Dr. Cooper Rose, with only 7·2 forcep-cases per 1000. Dr. Cooper Rose has also the advantage of 0·2 in the total still-birth percentage. The results to the mothers in Mr. Harper's practice are not stated, except that no death occurred after delivery by forceps. Dr. Cooper Rose, with his very low forceps-rate, has the best maternal death-rate of any in the table—namely, one of only 1·6 per 1000.

No further explanation of the ratios tabulated in Table II. will be necessary, except to state that, in reckoning the percentages of still-births in forceps cases, all forceps cases, for whatever cause undertaken, are included, while, in reference to the ratios of maternal deaths, cases of forceps applied on account of tedious or difficult labour are reckoned separately. It would have been preferable to follow the same plan also in the former case, but many of the statistics did not give the required information. The difference, however, made by this mode of reckoning would in each instance be very slight. In the first annual report of Dr. G. Johnston the number of abortions under six months is not mentioned. In estimating therefore the total number of deliveries for the seven



years of his mastership, a correction has been made for the number of abortions in this year, on the assumption that it was equal to the mean of the other six years.

I have throughout taken for comparison the deaths from all causes, and not attempted to distinguish between puerperal and non-puerperal deaths, a task which a reference to the records would show to be one of extreme difficulty. I believe it is now generally agreed that this plan is the best to adopt, although, if the total number of cases be small, it might, unless care be taken, lead to erroneous conclusions. For even upon deaths due to antecedent disease the puerperal state has generally a determining influence, and it is notorious that puerperal maladies, really due to septicæmia, frequently appear under the guise of bronchitis or pneumonia, or are even ascribed to phthisis. It may be regarded as probable that the death-rates given in statistics of private practice are better than the average under similar circumstances, since those who have been fortunate in this respect would naturally be more inclined to publish their results than those who have been otherwise, and in most cases the numbers are not large enough to avoid the probability of very considerable casual variations.

As to any final conclusions, the numbers in the tables will be of more value than any deductions I can make. The following, however, may be summarized as being the chief points indicated.

1. It has not been shown that the majority, or any considerable proportion, of the still-births which now occur in Britain would be preventible by a more timely resort to forceps.

2. As to the advantage to foetal life to be gained by frequent and early interference, compared with a moderately low forceps-rate, the evidence is somewhat contradictory. The statistics of Dr. Hamilton of Falkirk and Dr. Playfair appear to show a possible gain of as much as 0·6 per cent., but they are open to the objection that the comparison is not made under parallel circumstances, and that the number of cases is too small to exclude the probability of large casual variation. The results of Dr. G. Johnston, compared with those of Dr. Shekleton, appear to show a total gain

of about 0·5 per cent., but of this a considerable proportion is accounted for by the substitution of forceps for craniotomy. On the other hand, the records of the maternity charities of London hospitals, with forceps-rates varying from 5·1 to 61·8 per 1000, show no advantage to foetal life from the higher rates.

3. The results of the St. Thomas's Charity show forceps-rates up to 61·8 per 1000 employed absolutely without any injurious effects to the mothers, so far as this is proved by 2913 deliveries. Mr. Godson's partner, in about 500 labours, obtained admirable results to the mothers, but no benefit to the children, with a forceps-rate of something like 200 per 1000. On the other hand, in the London charities there is no positive evidence of any perceptible improvement to the maternal death-rate from the higher forceps-rates. And at Guy's, out of more than 38,000 deliveries, a forceps-rate of only about 5 per 1000 gave very good general results to the mothers, and an especially low death-rate after difficult or protracted labour.

4. The results of Dr. Hamilton of Falkirk, who practised very early as well as frequent interference, and of Dr. G. Johnston, who of late applied forceps in a fourth of the cases before full dilatation of the os uteri, do not prove any advantage thereby gained to the mothers, but, on the contrary, are consistent with the supposition that their risks were considerably increased. No statistics appear to have been yet published showing any distinct gain to the children combined with good results to the mothers, from a very frequent or early use of the instrument.

In conclusion, I have to express my great obligation to Dr. G. Johnston, Dr. Playfair, Dr. Godson, Dr. Cory, Dr. Roper, and Dr. Hamilton, for the courtesy with which they have afforded me some information not hitherto published, and so have enabled me to make my comparison more complete.

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#### AUTHORITIES QUOTED.

Practical Treatise on Midwifery; containing the result of 16,654 Births at the Dublin Lying-in Hospital during seven years, commencing November, 1826. By Robert Collins, M.D. 1835.

Sketch of the Life and Writings of the late Joseph Clarke ; containing the results of his Private Practice, extending over forty-four years, including 3878 Births. By Robert Collins, M.D. 1849.

Practical Midwifery ; comprising an Account of 13,748 Deliveries at the Dublin Lying-in Hospital, during seven years, commencing November, 1847. By Edward B. Sinclair, M.D., and George Johnston, M.D. 1858.

Annual Clinical Reports of the Rotunda Lying-in Hospital for 1869—1875. By George Johnston, M.D.

Annual Report of the Rotunda Lying-in Hospital for 1876. By Lombe Atthill, M.D.

Zymotic Diseases, as more especially illustrated by Puerperal Fever. By Evory Kennedy, M.D. : Dublin Quarterly Journal of Medical Science, vol. xlvii. 1869.

Annual Address to the Dublin Obstetrical Society. By G. H. Kidd, M.D. : Dublin Journal of Medical Science, vol. liii. 1872.

Statistical Report of Guy's Hospital Lying-in Charity, from October, 1833, to October, 1840. By John C. W. Lever. Guy's Hospital Reports. First Series, vol. vi. 1841.

Second Septennial Report of Guy's Lying-in Charity. By John C. W. Lever, M.D., and Henry Oldham, M.D. ; extracted from the Case-books by Mr. T. Beaven Rake : Guy's Hospital Reports. Second Series, vol. vi. 1849.

Third Septennial Report of Guy's Lying-in Charity, from October, 1847, to October, 1854 ; collated from the records by S. J. C. Norman. Presented by J. C. W. Lever, M.D., and H. Oldham, M.D. : Guy's Hospital Reports. Third Series, vol. ii. 1856.

Fourth Decennial Report of the Guy's Hospital Lying-in Charity. By J. Braxton Hicks, M.D. : Guy's Hospital Reports. Third Series, vol. x. 1864.

Fifth Report of the Guy's Hospital Lying-in Charity, from October, 1863, to October, 1875. By A. L. Galabin, M.D. : Guy's Hospital Reports. Third Series, vol. xxi. 1876.

The Hospital Midwifery Statistics, from January 1, 1862, to December 31, 1868. Prepared by Clement Godson : St. Bartholomew's Hospital Reports, vol. v. 1869.

Report of the Maternity Department from 1854 to 1871. By Edgar G. Barnes, M.B. : St. George's Hospital Reports, vol. vi. 1871—1872.

On the Mortality arising from the Use of the Forceps in Tedious Labours. By G. Hamilton, M.D., Falkirk : British and Foreign Medico-Chirurgical Review, April, 1853.

On Asphyxia Neonatorum and Infantile Mortality at Birth. By G. Hamilton, M.D. : Edinburgh Medical Journal, May, 1855.

On the Use of Forceps in Tedious Labours. By G. Hamilton, M.D. : Edinburgh Medical Journal, October, 1861.

On the Proper Management of Tedious Labours. By G. Hamilton, M.D. : British and Foreign Medico-Chirurgical Review, October, 1871, and January, 1872.

Bericht über die Ereignisse in der unter der Leitung Professor Hecker's Geburtshülffichen Poliklinik der Ludwig Maximilians Universität zu München, 1859—1865. Von M. Braun und J. Poppel.

The more Frequent Use of Forceps as a Means of Lessening both Foetal and Maternal Mortality. By P. H. Harper, F.R.C.S. : *Obstetrical Transactions*, vol. i.

Statistical Report of One Thousand Midwifery Cases. By S. Lawrence, M.D., Montrose : *Edinburgh Medical Journal*, 1863.

Contributions to the Statistics of Midwifery in General Practice, By H. Cooper Rose, M.D. : *Obstetrical Transactions*, vol. xviii.

Midwifery Statistics of Thirty-five Years Practice, from the Records of his Father, Charles Godson. By Clement Godson, M.D. : *Obstetrical Transactions*, vol. xviii.

The Forceps in Modern Midwifery. By A. W. Edis, M.D. : *Reported in Obstetrical Journal*, April, 1877.

## ON THE MECHANISM OF LABOUR.

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*(Continued from p. 523.)*

IN the preceding portion of this paper I have endeavoured to establish, as primary principles in the elucidation of the mechanism of labour, that the resultant of the uterine forces is, throughout the whole of labour, always in the direction of, and coincides with, the position of the axis of the uterus ; that it is wrong to suppose that after the rupture of the membranes the uterine forces are mainly exerted through the foetal spinal column ; and that the axis of the head through which the force is directed will constantly change, and has not for a centre the occipito-atlantoid joint.

If these principles be established they at once remove many of the difficulties concerning which there has been so much difference of opinion—especially as regards the mechanism of contracted brim. But before entering on the discussion of these, there are other principles to be discussed.

In relation to the direction of the uterine resultant, there is an important consideration that must be kept in view. The axis of the uterus does not always, even when the labour is normal, pass through the centre of the os. When



it does not, the effect of the uterine pressure must be greater on one side of the cervix than the other. Were the cervix a perfectly elastic ring, this would not be the case; for any pressure exerted on one spot would be directly transmitted throughout. But the cervix is sparingly elastic, and it follows that the pressure must be unequal—must be greater on the side towards which the resultant is directed. When the axis of the uterus is thus abnormally situated, it is a matter of common observation to find one side of the cervix stretched and thinned, while the other is apparently lax and thick. This, to my mind, is the proper explanation of that condition where the anterior lip is found not to recede in the normal manner over the head. It has hitherto been explained by the supposition that the cervix has been caught by undue pressure between the head and the pubes. The proper explanation seems to me to be that it is owing to the uterine pressure being directed too far backwards, pressing entirely upon the posterior lip, directing the head into the hollow of the sacrum, and leaving the anterior lip free and unstretched, but drawn down by its connexion with the posterior portion. The anterior lip may be pressed up by the finger, but it is found frequently to be again prolapsed during the next pain. In the correction of this condition the direction of the axis of the uterus should be altered by change of position and the application of a binder.

For the thorough elucidation of the mechanism of labour, and to apply our scientific knowledge to the advancement of our art, it is necessary to have a full and precise conception of the nature of the movements of the head in its passage through the parturient canal. The movements which take place have all been carefully observed and described, but, nevertheless, writers on obstetric problems are constantly found to base their reasoning, and lay down practical rules on far too limited and insufficient a conception. Thus, the directions for the use of the forceps are based too exclusively upon the conception which we figure graphically by the line representing the axis of the developed canal. Other movements are not overlooked by authors, such as Dr. Barnes, but in many cases they are not correctly stated. His defence

of the pendulum motion in using forceps may prove the method to be effectual, but it is not according to nature. The see-saw motion he describes does not occur in nature. Her method is to depress gradually and continuously one end of the antero-posterior diameter of the head, and then to produce the revolving motion under the pubis. The pendulum action, and even the ordinary rule "always to draw in the axis of the canal," fails in closely imitating nature.

When we represent the movement of the head by the graphic line of the axis of the canal, we reduce the conception of the head to a mere point, which travels in the direction of the curved line. But this line does not represent the movements which must be imparted to the head, any more than the parabolic line of a projectile represents all its motions. The science of projectiles and the condition of our artillery could never have attained their present precision had engineers confined themselves to the study of the mere path of the projectile. The advance made in this department has been due to the attention paid to the other motions. So in obstetrics, advance will not be made till a wider conception is constantly employed than that represented by the axis of the canal.

From the curved direction of the canal, and the alterations in the comparative lengths of the various diameters, certain movements of rotation around different axes are imparted to the head. These movements have been accurately described, but the exact mode of their production is still a matter of dispute. The various curves and inclined planes of the pelvis have all been carefully studied, but authors have assigned very various influences to the different parts. Against all their assumptions there is this difficulty, that *no one of the special movements of rotation occurs always at the same point or position in the pelvis*. Thus the movement, whereby the occiput is rotated forwards, may be observed taking place as the head is passing through the os, or when the head has reached the floor of the pelvis. The analogous rotation in face cases has even occurred only when emerging through the external parts. Again, the movement of chin flexion occurs usually during the passage through the os,

but in some cases does not take place till the head is far advanced in the pelvis.

We may therefore conclude that whilst the rotations of the head on its several axes are due to the curved nature of the canal, it is wrong to assign to any limited portion, such as the spine of ischium or the inclined planes, the sole production of the movements. It is this limitation that has compelled authors to advance one principle of action for occipito-anterior presentations, and another for the occipito-posterior.

I would further widen this principle, and state that it is not merely in the bony portion of the canal that we are to find our factors, but that the soft parts have an important if not essential influence in the mechanism of labour. Kueneker specially, and with him most writers, regard the soft parts, except at the outlet, as exerting no essential influence in the production of mechanism. This is true only in a very limited sense. The cervix may not take any part in the production of rotation, and failing it the other parts are sufficient to produce the necessary movements, and therefore it may not be absolutely essential. In the same sense the action of the saliva may be said to be not essential to the digestion of starch. But there is a very important part borne by the cervix in the mechanism—viz., in the production of early chin flexion, and upon this movement depends the facility with which the other movements are produced. The more the chin is flexed the earlier and more readily is the occiput rotated. Further, the movement of rotation may be said to be initiated by the cervix if it is not too far obliterated before the head passes through it.

When the cervix exerts its influence upon the head, the occiput is depressed, and passes through the os before the forehead. At this stage, whilst the cervical tissues no longer resist the posterior part of the head, we find them still holding back the fore-part, and the chin thereby becomes flexed upon the breast.

If we pass a head in this manner through an artificial os, we can readily observe that it does not move forwards in the axis of the os, but that the forehead slides off the ring, the head moving in an oblique direction to the axis in the direc-

tion in which the occiput is looking. In the pelvis this lateral movement does not occur, for the head is restrained by the walls of the pelvis. Nevertheless, the direction of the forces must undergo the change above indicated. If we regard (which is sufficiently accurate for our present purpose) that the resultant of the uterine pressure acts downwards in the sagittal plane, when the occiput has escaped from the cervix before the forehead the direction of the force must deviate into that of the oblique diameter in which the head is lying and to the side towards which the occiput looks. In this manner we can recognise an influence which causes a lateral turning in the direction of the force, and thus initiates the movement of rotation. This I regard to be a function of the cervix which has not been recognised, but one of great importance both practically and scientifically. I therefore hold that the soft parts play a very important, if not essential, part in the mechanism of labour.

Some authors describe a movement of chin extension as occurring when the head first experiences the resistance of the floor of the pelvis, and such a movement does take place in many cases. But it is unnecessary, and should not be regarded as an essential part of the normal mechanism. It occurs when the os has been so far dilated as to permit of the movement, the ready descent of the forehead; and in such cases the action has again to be undone—the chin has again to be flexed. We have therefore a greater expenditure of effort than is necessary, which is prevented when the cervix performs its function. This movement of extension which is occasionally observed under the above circumstances, shows also that the action of the floor of the pelvis is, *by itself*, not what is generally represented—namely, to direct the occiput forwards; but that it tends to arrest the progress at this point, and to produce a rotation on the transverse axis of the head, indicated by chin extension.

Before rotation can readily take place, an equal force in an opposite and parallel direction must act at the other end of the axis, and in the same plane. If the only forces acting are the uterine pressure and the resistance of a



point in the posterior wall, the rotation which takes place must be round an axis perpendicular to the plane between the two forces—not in one parallel to them. But into this we are not yet in a position to enter, but sufficient has been said to show that the principles of mechanics which must be employed to elucidate the mechanism of labour are not those of the lever or the inclined plane, or even the parallelogram of forces alone, but such as are applied to investigate the production of motion in a solid body, and specially the movements of rotation. Before proceeding further, therefore, we must inquire what are the principles that should guide us in dealing with the problems that we have to solve.

*(To be continued.)*

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ADDITIONAL CASES ILLUSTRATING THE CHANGES WHICH  
OCCUR PERIODICALLY IN

THE MUCOUS MEMBRANE OF THE UTERUS.

By JOHN WILLIAMS, M.D.

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THE following seven Cases have come under my observation since the publication of my paper on "The Mucous Membrane of the Uterus and its Periodical Changes" in the OBSTETRICAL JOURNAL for 1874. When the appearances met with in any case of the present series are similar or identical with those found in any one of the former series, I shall simply state that fact in the description, in order to save unnecessary repetition.

13. This specimen was taken from the body of a young girl aged fifteen years. She died on January 3rd, the third day of menstruation, from the effects of strychnine. The uterus and ovaries were removed the day after death, and sent to Dr. Braxton Hicks, who kindly sent them on to me on January 5th, 1875. The organs had been packed in lint and oiled silk, and appeared fresh and sweet.

The uterus measured  $2\frac{3}{4}$  inches from the top of the fundus to the lowest point of the cervix. The external os was filled

with a little bloody mucus. The lips were of a pink colour. The vessels of the peritoneal surface, of the broad ligaments (which had been cut short), and of the Fallopian tubes contained but little blood. The uterus was opened along the middle line anteriorly. The cavity contained a little pinky fluid. The lower third of the cervix in section appeared congested, and of a red colour. The remainder of the section was pale and bloodless, except the decidua, or so-called "mucous membrane" of the body of the uterus. This was of a pink colour from the internal orifice to the orifices of the Fallopian tubes. It was extremely thin near the internal os, a little thicker (measuring about 1-16-inch) in the upper part of the cavity. It was soft and pulpy, and its surface was irregular and flocculent. To the naked eye it presented no red or white striæ, like those formed by bloodvessels and glands; but the microscope discovered a few traces of glands lined by columnar epithelium, together with some small hæmorrhages into the substance of the decidua. There was no trace of epithelial covering on the surface. The elements of the tissue were in a state of fatty degeneration. The lowest part above the os internum was not abruptly distinguished from the subjacent wall, but in the upper part, and at the fundus, there was an abrupt distinction between the degenerated decidua and the muscular tissue.

There can be no doubt that in this case a layer of decidua (probably  $\frac{1}{8}$ -inch thick at least) had been already removed; that the layer still left was in a state of fatty degeneration and in process of removal; and further, that active changes were taking place in the uterine tissue immediately beneath the effete decidua—these changes being the commencement of the formation of a new decidua.

14. This specimen was the uterus of a young girl, aged fifteen years, who died of traumatic tetanus on the fifth day after admission into the Middlesex Hospital. She had ceased to menstruate just before admission, so that she died five or six days after the cessation of a catamenial flow.

The uterus was small, its canal measuring  $1\frac{3}{4}$ -inch only. It was lined by a decidua, having a smooth surface, measuring 1-24-inch in thickness at the middle of the uterine

wall, where it was thickest, but less at the fundus and immediately within the internal orifice. The whole organ was almost bloodless. With the exception that congestion was not present, the decidua in this specimen presented appearances similar to those described under Case 4 in my former paper. As far as the development of the decidua is concerned, the two specimens appear to be in precisely the same condition.

15. This uterus belonged to a patient who died of pericarditis and pleuro-pneumonia after rheumatic fever. The woman was admitted into University College Hospital on December 10th. She had then menstruated for a week, and continued to do so for three days more, till December 13th. She died December 20th, seven days after the cessation of the flow. The uterus and its appendages were greatly congested. It was lined by a decidua rather more than a line in depth on the middle of the sides, and rather more than half a line at the fundus. This appears to be in a more advanced state of growth than that found in the previous case, for it is about twice as thick, though apparently only one day older. It is probable, however, that the bleeding, which lasted at least ten days, was not altogether menstrual—that, in fact, a hæmorrhage followed menstruation by reason of the congestion arising from the obstruction to the circulation through the heart and lungs. If this be the case, the decidua is not seven, but ten or twelve days' growth.

16. The patient was twenty-six years of age; she ceased to menstruate May 20th, and died May 28th of Bright's disease. She had been regular every five or six weeks, the flow lasting each time six to nine days. The cavity of the uterus measured  $2\frac{1}{2}$  inches in length; the uterine wall, at its thickest part,  $\frac{3}{4}$ -inch; its tissue was soft. The outer two-thirds of the wall was much injected. The vessels were full, and some of them distended by partially decolorised clots. The inner third of the wall was bloodless, except the decidua, which was irregularly congested, the injection being most marked midway between the inner orifice and the fundus, where the membrane was thickest. The cavity contained a little bloody mucus. The decidua in this case was similar to that in Case 4.

17. The patient died of general purulent peritonitis five days after ovariectomy had been performed. She said she menstruated every fortnight. The last flow, which appeared three days later than expected, took place Feb. 3 to Feb. 7 or 8. Death occurred Feb. 21st, thirteen days after the cessation of menstruation.

The decidua measured  $\frac{1}{8}$ -inch in thickness, on the side of the uterus, somewhat less at the fundus. The glandular elements were few in number and small in size. The distinction between the decidua and the subjacent tissue was nowhere abrupt, but it was more marked at the fundus than elsewhere.

18. The patient, aged forty-one, died immediately after ovariectomy, seventeen days after the cessation of the last menstruation. For the last two years of her life she had menstruated about every sixteen days, the flow lasting each time four days. The flow was normal in amount.

The uterus was elongated, measuring four inches in length. The body was lined by a decidua nearly  $\frac{1}{8}$ -inch in thickness on the sides, but about half that thickness at the fundus. In the latter situation there was no abrupt distinction between the decidua and the muscular wall, but elsewhere such a distinction was well marked. The membrane was congested, and slight hæmorrhage had taken place into its superficial layer, but the catamenial flow had not begun.

19. The patient died of pyæmia in the third week after menstruation had ceased. The uterus was of normal size; its walls pale. The decidua was well developed, thicker at the fundus and upper part of the organ than elsewhere. It was softish and slightly congested, and appeared to have arrived at the same stage of development as that in Case 5 in my former paper.

The above Cases appear to me to corroborate the view of the structure and periodical changes of the "mucous membrane" of the uterus enunciated in my former paper—that is, that a decidua is removed at every menstrual epoch, and that a new decidua is developed monthly by the proliferation of the layer of the uterine wall immediately subjacent to the old and effete decidua, the new formation beginning, during



the menstrual flow, before the whole of the old decidua has been removed, immediately within the inner orifice, gradually developed upwards towards the fundus, and completed only just before the menstrual epoch next following.

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### Notices and Reviews of Books.

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*Studien über die Uterusschleimhaut während Menstruation, Schwangerschaft, und Wochenbett.* Von Dr. GERHARD LEOPOLD. I. THEIL. *Die Uterusschleimhaut und die Menstruation.* Leipzig. 1877.

*Studies on the Uterine Mucous Membrane during Menstruation, Pregnancy, and the Puerperal State.* By Dr. GERHARD LEOPOLD. PART I. *The Uterine Mucous Membrane and Menstruation.* Leipzig. 1877.

PROBABLY no subject connected with uterine or ovarian physiology and pathology has attracted more interest of late years than the study of the several changes associated with menstruation, their relation to each other, and the bearing which such changes have upon morbid conditions of the organs concerned. With regard to the behaviour of the mucous membrane, it may be regarded as now definitely established that this mucous membrane does not swell during the flow, but has attained its greatest thickness and development just before the commencement of menstruation, by a process of growth which has been called by Dr. Aveling nidation, and that there is, at any rate, some degree of exfoliation, since elements of the mucous membrane may be found in the menstrual blood, especially during the first day or two of the period. It is also agreed that, as a morbid condition, the mucous membrane, or its upper layers, may be thrown off in larger or smaller shreds, instead of being disintegratud, thus constituting a variety of dysmenorrhœa which has only in its more extreme form been commonly recognised under the title of membranous dysmenorrhœa. With regard, however, to the degree of disintegration in the normal condition,

evidence has been very contradictory. Readers of this Journal need not be reminded of the important observations of Dr. J. Williams, an additional series of which are contained in the present number, and the admirable microscopic drawings by which they were supported. Dr. Williams concludes that the whole of the soft tissue generally regarded as mucous membrane is thrown off at each period, although he considers the inner muscular layer, in which lie the extremities of the gland tubes, as being in fact the muscularis mucosæ. Of other recent observers, however, both Kundrat and Engelmann, who had rare opportunities of study in the pathological laboratory of the Vienna Hospital—within whose walls the post-mortem examinations of the immense hospital, as well as the legal inquests of the capital, are held—arrived at a very opposite conclusion. They found that even at the end of the period, or for some days after its conclusion, the mucous membrane was still more or less tumefied, and thicker than at the period of greatest quiescence. Engelmann, indeed, upholds to the full the older view, and declares that in not one of the many uteri examined at such periods was even the superficial layer of the mucous membrane found wanting. It is here to be remarked that in the majority of cases the authors do not appear to have had exact histories of the date of menstruation, but to have drawn their inference from the appearance of the Graafian vesicle or corpus luteum.

In the treatise before us, which forms the first part of a work including also the changes of the uterine mucous membrane in pregnancy and parturition, some interesting evidence of this subject is adduced. The author objects to the observations of Dr. Williams, in which the whole or the greater part of the mucous membrane was found to have been removed, that all these were upon women who had died from acute febrile diseases, which would be likely to produce a morbid softening of this tissue, and lays it down that only cases of death by accident should be taken as proof that such disintegration is a normal event. It will be observed that one of the cases recorded in the present number of this Journal is not open to this objection, since death by strychnia poisoning may be regarded as being, in this respect, equiva-

lent to death by accident. Dr. Leopold is fortunate enough to be able to record two cases of death by accident during menstruation, and gives figures of the mucous membrane in these instances. The first was that of a virgin, nineteen years old, who had menstruated regularly for four years. Menstruation had commenced on the morning of the day on which she was killed by a fall. The mucous membrane of the uterine body was from  $1\frac{1}{2}$  to  $2\frac{1}{2}$  mm. thick, its surface undulating. The epithelium on its free surface was intact in many parts, but in others there was a very trifling loss of substance. No fatty degeneration was discovered, but blood was effused round the vessels in the superficial layers. The second case was that of a girl, aged twenty, who had menstruated regularly for six years, and was killed by an explosion on the third day of the period. The uterus, as well as the Fallopian tubes, was swollen and hyperæmic. The mucous membrane of the body was from 2 to  $3\frac{1}{2}$  mm. thick, and by its swelling nearly filled up the lumen of the uterus. The epithelium was lost from its surface, but only a superficial layer had been thrown off.

Dr. Leopold records also four other cases, one of them also an instance of death from accident, which likewise afford valuable evidence. The first was that of a woman, aged twenty-eight, who died from chronic interstitial nephritis, nine days from the commencement, and four days from the end of a menstrual period. The mucous membrane of the uterine body had a uniform thickness of 2 mm., was anæmic, and appeared perfectly intact, the surface being everywhere clothed with cylindrical epithelium. The second case was that of a woman, aged thirty-eight, who died from acute meningitis nine days after the commencement and five days after the end of a menstrual period. The mucous membrane was congested, varying from 2 to 3 mm. in thickness; its covering of cylindrical epithelium was almost everywhere intact. The third case was that of a woman, thirty-four years old, who died from apoplexy twenty-one days after the commencement of the last period, menstruation generally lasting from six to eight days. The mucous membrane was 5 mm. thick at the

centre, diminishing to 3 mm. at the angles of the uterus. It was soft and pale red; the epithelium on its surface was distinct. The fourth case was that of a girl, twenty-three years old, who died a few hours after being scalded by steam. Menstruation had always been regular, and the next period was due in two days. The mucous membrane was red; its thickness on the anterior and posterior walls was 6—7 mm., diminishing at the sides and over the fundus to 4 mm. It was rich in glands, which in the deeper layers formed a sieve-like appearance. Glands and surface were clothed with cylindrical epithelium; and at some points of the latter the ciliæ could be distinguished. No fatty degeneration could be detected even at the surface.

The author concludes that the exfoliation which takes place during menstruation is only very superficial, and he believes that complete regeneration may take place even within so short a space as one day. The very considerable increase of thickness in the mucous membrane, observed by himself and others shortly before the period, he attributes to œdematous swelling. It would seem, however, to be a very difficult matter to judge, after the most superficial layer has been thrown off, that the diminished thickness is due chiefly to decreased swelling and not to loss of substance; and it will be observed that the comparative thicknesses recorded would be consistent with a very much more considerable exfoliation than the author is disposed to admit, if not with one so complete as described by Dr. J. Williams. At any rate, his cases are significant as evidence, in opposition to Kundrat and Engelmann, that exfoliation in some degree does occur.

As to the immediate cause of the hæmorrhage and accompanying exfoliation, Dr. Leopold differs from Kundrat, Engelmann, and Williams, who all ascribe it to fatty degeneration of the mucous membrane. He considers that the only proof of this would be to find fatty degeneration preceding the hæmorrhage—a condition actually described by Williams in two cases. The author, however, finding shortly before menstruation no degeneration but minute hæmorrhages from the dilated capillaries, regards the exfolia-



tion as purely secondary to the hyperæmia. Why it does not ensue when pregnancy occurs, bringing increased hyperæmia, he does not explain.

For the benefit of those who may be disposed for themselves to verify or correct the observations of Dr. J. Williams, it may be mentioned that Dr. Leopold recommends that the uteri should be placed first in weak, then in strong spirit, and that he declares that, if placed first in Müller's fluid, the mucous membrane undergoes post-mortem dissolution.

Another point, for the solution of which conclusive evidence is, as yet, even more deficient than with regard to the exfoliation of the uterine mucous membrane, is at what period, in reference to menstruation, the Graafian follicle is commonly ruptured, and at what time the uterus is capable of affording lodgment to the impregnated ovum. Upon this depends the answer to the very practical question, At what time is coitus most likely to lead to conception? This has also a close dependence upon the behaviour of the mucous membrane during the menstrual period, for if only its most superficial layer be cast off, the lining membrane may easily be fit to receive the ovum a few days after the end of menstruation; while, if Dr. Williams's view be accepted, we can hardly escape the conclusion that it is only towards the end of the inter-menstrual period that this tissue has the development necessary to make it a suitable nidus.

It has until lately been generally assumed that the fertilised ovum belongs to the menstrual period last preceding conception; but several of the recent observers, including Loewenhardt, Kundrat, and Williams, favour the view that it is coeval with the menstrual period following, at which no discharge, or only a very slight one, takes place. Engelmann, however, takes the older view, that the rupture of the follicle generally takes place towards the close of the catemenial period, having found indications of very recent rupture when death had occurred during menstruation, and no rupture when the state of the uterus showed the period to be imminent. He does not, however, record any case of death during menstruation, with the follicle yet unruptured. Dr.

J. Williams, in a paper read before the Royal Society, brought forward a series of cases to show that the follicle generally ruptures shortly before the commencement of the hæmorrhage. Reichart also has recorded a case in which the ovum had already escaped, but no bleeding had begun ; and the instances now reported by Leopold tend to support the same view. In the case of death two days before the expected period, the follicle had already burst, and the ovum escaped. Also in the cases of death on the first and on the third day of menstruation, the appearance of the follicle appeared to indicate that it had probably burst a day or two before hæmorrhage began. On the other hand, two cases, cited by Dalton in his prize essay "On the Corpus Luteum of Menstruation and Pregnancy," appear to show conclusively that sometimes, at any rate, the case is otherwise. In the first, in which death occurred during the period, the ovary contained an enlarged vesicle not yet ruptured ; in the second, death took place at the termination of the period, and the vesicle was found prominent, and on the point of bursting.

The undoubted fact that a single fertilising coitus may take place about a week after the commencement of the last period does not absolutely prove that the fecundated ovum may belong to the period preceding conception, for it is not impossible, although not yet proved, that the spermatozoa may remain alive for eighteen or twenty days. If, however, it be proved that conception (as distinct from insemination) can only occur shortly before a menstrual period is due, this will contradict the general impression that coitus is more likely to be fertile soon after the end of menstruation, and also the accepted estimation of the duration of pregnancy, as well as the idea of any analogy between menstruation and the œstrus of animals. It is abundantly proved that insemination may prove effectual shortly before an expected period, but there is some *à priori* ground for thinking it likely that this is at least as probable at the other end of the cycle. For the period of enhanced sexual emotion is not so much before, as during and shortly after menstruation, and it would seem a strange provision of nature that sexual

feeling should be greatest precisely at the time when conception is impossible. It may not be out of place here to quote the authority of Dr. Marion Sims, who has made more precise observations than most men on sterility and fertilisation in women. He considers that coitus is most likely to secure conception either very shortly before menstruation, or within ten days after its conclusion, and that out of this period about a week after the conclusion is the preferable time. Of three cases which he cites of conception from a single known coitus, one took place four days, one nine days, and one ten days from the commencement of the flow, and he states that he might quote other instances like the last two.

Further evidence as to the usual time of rupture of the Graafian follicle, and, still more, as to the time which the ovum takes in reaching the uterus, is much to be desired. At present, taking into account the not very uncommon cases in which regular menstruation has continued after the removal of both ovaries, the most probable view would seem to be that the periodicity of the menstrual nixus depends immediately upon the nervous centres, and that the ultimate ripening and rupture of the Graafian follicle, as well as the hæmorrhage and exfoliation of the mucous membrane, are commonly determined by the hyperæmia so produced, so that the relative times of their occurrence may be subject to more or less variation, according to the degree of maturity of a follicle when such nixus commences.

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### Abstracts of Societies' Proceedings.

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#### OBSTETRICAL SOCIETY OF LONDON.

*Meeting, Nov. 7th, 1877.*

Dr. CHARLES WEST, *President, in the Chair.*

Dr. WILTSHIRE exhibited the new forceps of Dr. Tarnier, which were described in the OBSTETRICAL JOURNAL for June, 1877, p. 185. The original instrument was shown, and also a later modification, in which the handles were lighter, and the mode of articulation im-

proved. At the same time, the shoulder near the point of articulation was more rounded. A letter from Dr. Tarnier was read, in which he claimed for his instrument the following advantages:—They never wounded the child's head, the blades being made short, so as not to overlap it; they never slipped if the traction were made properly, but only if the handles were separated from the indicator. The rounded transverse bar afforded a powerful hold for traction, and was articulated to the traction-shanks so as to allow free rotation, and thus give the head the opportunity of rotating as it descended, without any guidance by the operator.

Dr. FANCOURT BARNES then applied the forceps to the foetal head on a model invented by Messrs. Budin and Pinard.

The PRESIDENT asked whether it would not be more difficult to use the instrument in the English left lateral position; and whether, judging from the exhibition on the phantom, it would not be likely to endanger the perineum in hands not quite so dexterous.

Dr. PLAYFAIR asked if the instrument would permit or effect rotation in occipito-posterior positions. He thought that the great curve in the instrument would cause difficulty if this were done, for it would then lose its correspondence with that of the pelvis.

Dr. WILTSHIRE said that he had tried the forceps on the phantom in the left lateral position, and found them easier to use than in the dorsal. Rotation might be effected, by grasping the prehensile branches and traction-shanks all together, so losing, it is true, the use of the former as an indicating needle.

Dr. BRAXTON HICKS said that all instruments should be reduced to the most extreme simplicity, unless it were proved both that the more complicated instrument did its work better, and that it could be used by practitioners in general. Dr. Tarnier's instrument was said to permit rotation; but the ordinary English forceps did the same, if the operator encouraged the indications of nature. The simple straight forceps would be perfect, if it were not that they endangered the perineum. He observed that the blades of this instrument were not so much curved as in most of the French forceps, and were more like the English. Probably this, rather than the other features of the instrument, accounted for less injury being done to the child's head. The instrument was too complicated to come into general use.

Dr. MATTHEWS DUNCAN said that the instrument had one good point—namely, that the oscillatory movement, which he considered useless and injurious, could not very well be made with it. The shape of the ordinary forceps was the result of much unconscious ingenuity; here all was conscious. One great defect was that the head was screwed in a vice, which was never loosened till it was born. With the ordinary forceps the operator could not help loosening the pressure in the intervals of traction. Another great advantage in the construction of the ordinary handles was that, as the traction was increased, compression was necessarily increased,



without any special forethought of the operator. There was no provision for this in Dr. Tarnier's instrument.

Dr. GALABIN said that the instrument appeared to him, in two respects, to fulfil imperfectly the design of the inventor. In the first place, the so-called indicating needle had not the first requisite of a perfect indicator—namely, extreme lightness; but, on the contrary, it had considerable weight, and this acted at an enormous leverage, so that in the dorsal position it would fall somewhat below its true direction. In the second place, the articulation of traction-shanks and prehensile branches did not lie on the transverse axis of the head, as it must do in order to allow the head perfect freedom in extension. Both causes would tend to render the direction of traction too much posterior, while with the ordinary forceps it was too much anterior. The former was the worst fault, since the perineum was more likely to suffer injury than the anterior vaginal wall.

Dr. FANCOURT BARNES said that the inventor claimed that, when the head was arrested above the brim, it was drawn backward into the hollow of the sacrum by this instrument, and not pressed against the symphysis, as with the ordinary forceps.

Dr. AVELING said that the sigmoid curve was logically correct. About ten years ago he had himself proposed forceps having such a curve. Dr. Johnston first proposed it, then Hubert, then himself, then Moralés, and lastly, Tarnier. There was thus a gradual growth, like that mentioned by Dr. Matthews Duncan in the case of the ordinary forceps.

Dr. WILTSHIRE said that the compressing force upon the head was readily intermitted by unscrewing the vice. As to the weight of the handles, he thought they might be made lighter. As it was, Dr. Galabin's objection was certainly a valid one, especially in the French position. As to the complication of the instrument, perhaps it was more apparent than real.

Dr. GALABIN showed a pair of forceps, which he had had constructed in order to carry out one of the objects aimed at by Tarnier—namely, to allow traction to be precisely in the axis of the brim, or other part of the pelvic curve. Dr. Tarnier had gone too far in saying that it was impossible ever to do this with the ordinary forceps; but it could only be done by making one hand the fulcrum and the other the power of a lever. When strong traction was necessary, this could not be carried out, and there was undue pressure on the anterior pelvic wall. In the forceps shown, the shanks were bent back below the locks, nearly at a right angle, till they met the prolonged axis of the blades, and ended in straight handles in the direction of that axis. The handles had flanges like those of Simpson's forceps, which afforded a better hold than the ring-like aperture for one finger in those of Barnes. The transverse part of the handles also afforded a powerful hold, if necessary. The lock was made the reverse of the common way, so that the upper, or more difficult blade, was introduced first. In one instance of arrest above the pelvic brim, in which

Barnes's forceps had been repeatedly applied by his assistants and by himself, and each time had slipped, the new instrument effected extraction, and avoided craniotomy. It was easier to lock in difficult cases than ordinary forceps, since the shape of the handles gave great facility in rotating each blade. The principle of the instrument was similar to that of several of those mentioned by Dr. Aveling; but it differed from the British in the backward curve being more complete, and from the foreign in having an English lock.

Dr. BRAXTON HICKS thought that a leverage might be exercised, as the handles were carried forwards, and that the blades might then tend to slip off the head posteriorly.

Dr. AVELING said that the curve of the instrument was like that of Morale's forceps. He thought that the straight handles made the whole instrument too long.

Dr. FANCOURT BARNES exhibited the phantom designed by Drs. Budin and Pinard. It was in carved wood, the perineum and vulva being represented in india-rubber. It represented the patient in the dorsal position, usual in France, and was designed to facilitate the teaching of palpation and obstetric operations in classes. The sacrum could be screwed forward so as to diminish the conjugate diameter. The uterus itself was represented by an india-rubber bag, and its anterior surface was covered by an india-rubber diaphragm which buttoned down at the sides. The bag could be filled with water, the foetus being within, and the uterus filled with liquor amnii so closely imitated as to allow practice in external palpation.

Dr. BRAXTON HICKS showed and described the phantom used at Guy's Hospital. Such a one was first constructed ten years ago, and the one shown had stood rough usage for seven years. It had been much admired, and copied by several other schools. It consisted of a real pelvis, covered with india-rubber, and placed on a stand in the left lateral position. To this was adapted a wooden model, representing the uterus with one side removed, and the spinal column. A real foetus could be placed in the uterus in any position, and version or the application of forceps practised. The mechanism was represented just as in the actual uterus.

Dr. ROUTH thought it would be a good thing if the Vienna plan were carried out. A dead woman was there placed upon the table, and an actual foetus used. This was much better than any phantom. Dead women were abundant there, since the hospital contained 4000 beds.

Mr. BROWN asked if the uterus were natural, as well as the rest of the body.

Dr. ROUTH said that when he was there that was the case, there being an abundant supply through deaths from puerperal fever.

Dr. EDIS said that such a plan would contaminate the hands of the teacher. He had himself been at Vienna, and thought that he might innocently have been the cause of many deaths in this way.

Dr. ROUTH said that the actual foetus used by Dr. Hicks was quite as dangerous.

Dr. HICKS said that the fœtus had been in pickle more than a year, and was quite innocuous.

Dr. WILTSHIRE said that the high price of bodies alone was sufficient to be fatal to Dr. Routh's suggestion.

Dr. GERVIS said that a similar phantom had been in use for some years at St. Thomas's, but he was not aware till now that its originator was Dr. Braxton Hicks. He thought they were much indebted to him. He thought the pelvis in the model was placed a little too far from the edge of the board.

Dr. HICKS said that it was made so intentionally, in order to teach students to be able to apply the forceps without moving the patient to the edge of the bed.

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*On a Diagnostic Sign of Vaginal Hæmorrhage during Parturition.*

By Dr. PAUL BUDIN, Paris.

The author pointed out that profuse and even fatal hæmorrhage may take place from the vagina after parturition, and that the patient's risk was much increased if this was mistaken for post-partum uterine hæmorrhage. He had seen an artery in the perineum spurting freely twelve hours after delivery. Lesions about the clitoris were generally easy to detect. But distended veins in the vaginal wall might also burst, and this was less easy to diagnose. The first case related was that of a primipara, aged twenty-two, the vertex presenting in the first position. The head had scarcely escaped from the vulva, when a flow of blood was seen by the side of the neck; the side of the child was also seen to be covered by blood. This could not come from the uterus, since the cervix was at the time still filled by the shoulders. After delivery a flow of vivid blood was observed from the right lateral region of the clitoris, due to a laceration at that point. Cold compresses were applied till the removal of the placenta. Some recurrence of bleeding then took place, but it was eventually arrested as before by pressure. In a second case, also that of a primipara, a stain of blood was noticed on the shoulder and back. The author feared vaginal hæmorrhage from a source higher up than the clitoris, since no flow of blood by the side of the neck was seen. Two or three minutes after delivery an abundant flow of blood from the vagina took place. The placenta was removed, and some clots expelled by pressure from the uterus, after which the uterus remained firm, but the hæmorrhage continued. The labia were then separated, and oozing of red blood was discovered from ruptured varicose veins at both sides of the vagina. It was evident that blood had flowed from hence after the expulsion of the child's body, and filled the vagina. The hæmorrhage was stopped by a linen compress in the vagina. After its removal it recurred at one side, and another compress had to be applied for a quarter of an hour more. In a third primipara a large stain of blood was observed on the side of the child. The author then foretold hæmorrhage from the vagina, which was verified by the fact.

Dr. EDIS mentioned a case which occurred in the Middlesex Hospital Charity. Eight hours after delivery flooding still continued, the patient was blanched, and the Obstetric Resident at a loss what to do, having administered ergot in vain. He found a rent an inch long under the clitoris, and an artery spurting. He failed to arrest the bleeding by torsion, on account of the bruising of the tissues, and therefore plugged with perchloride of iron, and applied pressure by means of a T bandage, which was kept in place thirty-six or forty-eight hours, a catheter being left in the urethra.

Dr. WILTSHIRE asked if any sloughing followed the use of the perchloride of iron. He thought that simple pressure was preferable, and that it would be quite sufficient to arrest the bleeding in such cases, which were often overlooked.

Dr. EDIS replied that it was a question of saving life. The sloughing which followed was trifling in amount.

Mr. WORSHIP showed a cancerous growth involving the uterus. The disease was of considerable standing, and a diagnosis of fibroid had been made at several hospitals. There was cancer of both ovaries, extending to the uterus. A brother and a sister of the patient had also died of cancer.

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*On the Choice of the Leg which should be seized in Version for Presentation of the Upper Extremity.*

By A. L. GALABIN, M.A., M.D.

The case referred to in the paper was that in which the liquor amnii has escaped, and bipolar version is no longer possible. The doctrine commonly taught in England was that, in such cases, it is necessary or desirable to carry on the hand to seize the upper knee, or that opposite to the presenting shoulder. This was first recommended by Sir James Simpson, on the ground that in this way the child is rotated on its longitudinal, as well as on its transverse axis, and by that means the presenting shoulder more effectually carried away from the os uteri. He had been followed by Drs. Tyler Smith, Barnes, Meadows, and Playfair. But the late Professor Martin of Berlin, and Professor Carl Braun, held the opposite opinion, and neither Schroeder nor Leishman recommended the upper leg to be seized, and might therefore be taken as being on the other side, since the lower leg was always taken in the absence of special effort to the contrary.

By taking the lower leg the foetus was rotated in its bilateral plane, and about an antero-posterior axis, a mode of rotation ignored by Sir James Simpson and Dr. Barnes. By taking the upper leg, it was intended to rotate it in the antero-posterior plane which passes through the presenting shoulder and the opposite hip, a movement which was equivalent to rotation on its transverse and longitudinal axis at the same moment. In dorso-posterior positions, however, this rotation often failed, as was proved by the back being found still directed backwards immediately after version. In such case the same kind of rotation was produced as by taking the lower leg, but at a less me-



chanical advantage. By two figures, drawn to the same scale, representing sections of the foetus, first in the bilateral plane, secondly, in the antero-posterior plane through the presenting shoulder and opposite hip, it was shown that traction on the lower leg acted at a greater mechanical advantage in effecting rotation on an antero-posterior axis than traction on the upper leg in effecting the combined rotation on a transverse and longitudinal axis, the perpendicular from the centre of the foetal trunk in the direction of the force being greater in the former case, in a proportion of nearly three to two. A more important advantage in seizing the lower leg was that, if a noose were placed upon the prolapsed arm, the operator would have, in the after extraction, complete command of the anterior arm, which was always the one which gave trouble in liberation, and often thereby caused the death of the foetus. Moreover, if the lower leg were seized, the more usual dorso-anterior position was not converted by the version into a dorso-posterior; a point of very minor importance, but one which might sometimes be worthy of consideration.

The author had practised this method in eight consecutive cases, without being obliged in any one of them to bring down afterwards the opposite leg. In some cases, however, if the foetus was dead and flaccid, the shoulder failed to rise, if version was performed in this way. In these instances, the upper leg might be brought down afterwards with as much advantage as if it had been seized in the first instance. In such very difficult cases of version there was an actual benefit in bringing down both legs, for not only was a means thereby afforded for more powerful traction, but more room was furnished within the uterus. Moreover, if the breech were first drawn down as low as to a transverse position by traction upon the lower leg, traction upon the upper leg would afterwards act at greater mechanical advantage in rotating the foetus on its longitudinal axis, and so aiding the elevation of the shoulder. The author considered that the argument of Dr. Barnes was not mechanically sound, in which it was stated that, in taking the lower leg, the line of motion of the leg was more or less perpendicular to that of the shoulder, and therefore the two got jammed together; while, if the upper leg were taken, the movements ran parallel in directly opposite directions, like the two ends of a rope round a pulley, and the left leg could not therefore be drawn down without causing the right shoulder to rise. The directions only appeared to be parallel by perspective in a view looked at in the bilateral plane of the foetus, in which Dr. Barnes's figures were drawn. It was clear that if any body were rotated in any way, so long as it did not bend, its opposite poles moved not in parallel lines, but in arcs of a circle. This was only deviated from in so far as that doubling together of the foetus took place, which all agreed was undesirable. The conclusion drawn by the author was that, in the majority of cases, it was preferable to seize, in the first instance, the nearer and lower knee, or that on the same side as the presenting shoulder. If, however, version could not be effected by this, and the

foetus became doubled up, the second leg should also be brought down, and the chief traction made upon that.

Dr. MATTHEWS DUNCAN said that, in the most difficult case of version he ever had, he took the most distant leg and pulled until he pulled it off altogether. He afterwards took the nearer leg, and succeeded. He had for many years taught that it was preferable to seize the leg homonymous with the presenting arm, according to the views which Dr. Galabin had so elaborately and successfully advocated.

Dr. HOLMAN said that he had for many years followed the practice of bringing down the nearer or more dependent knee, and had always succeeded in effecting version. He was glad to hear it explained on mechanical grounds why his practice had been right.

The PRESIDENT said that the paper was one of those which, as it did not merely propound certain views, but supported them by reasons, was difficult to answer without careful study. Probably many were convinced by it, and would act upon its conclusions; others seemed to be rather afraid of criticising it without longer consideration than the merely hearing it read would allow. Since Dr. Hicks had his model pelvis and foetus here, perhaps a practical demonstration might be given of the relative advantages of the two methods.

Dr. BRAXTON HICKS then showed on his phantom the mechanism of version by the upper and by the lower leg. Although the foetus was very flaccid, it appeared that version was effected with at least as much facility by the lower leg. Dr. Hicks remarked, however, that one condition in nature could not be imitated here—namely, the close contraction of the uterus around the child.

## OBSTETRICAL SOCIETY OF DUBLIN.

*Meeting, May 12th, 1877.*

THOMAS MORE MADDEN, *Vice-President, in the Chair.*

### *Ovarian Cyst.*

Dr. ATTHILL exhibited a very large ovarian cyst, removed five days before from a patient in the Rotunda Hospital. She was only nineteen years old, and the abdomen had been enlarging one year. Tapping had been performed three times. The operation was accomplished without difficulty, ether being administered by Dr. Ormsby, with his new inhaler, with very great success. There was no vomiting at the time or subsequently. The sutures were removed that morning, and the temperature then was 100°, pulse 98. He had no doubt that the issue would be favourable. There were no adhesions, save a slight one to the omentum.

*Amputation of the Uterus, in a Case of Chronic Inversion caused by a Fibrous Tumour.*

By ARTHUR V. MACAN, M.B., &amp;c.

There can be but little doubt that cases of inversion of the uterus are becoming rarer every day, and will be still less frequently met with when expulsion of the placenta by pressure over the fundus instead of by traction on the cord has become the rule among the profession. But even if injudicious treatment of the third stage of labour had ceased to be a frequent cause of this accident, we would still meet with cases of spontaneous inversion, which, for the sake of greater clearness, we may divide into three classes—1, those occurring immediately after delivery; 2, those caused by some tumour; and, lastly, those occurring in the undilated, unimpregnated uterus. The case I have the honour of bringing before the Society to-night, and for the opportunity of reporting which I am indebted to my friend Dr. C. E. Ryan of Emly, in the county Tipperary, belongs to the second of these classes.

CASE.—Bridget Heffernan, aged forty-six years, unmarried, never had a child. Menstruated first at the age of fourteen, and was regular till about fourteen years ago, the flow being, however, profuse and lasting four days. Fourteen years ago she was attacked with menorrhagia, the hæmorrhage recurring about every fourteen days for four years, and being very profuse. During this time she fainted very frequently, and her life was more than once despaired of. Since then the floodings have not been so frequent, and have appeared at irregular intervals. About six years ago, however, she had a very violent attack, and her life was again despaired of. Her symptoms during the intervals were not well marked, and consisted of slight pain in the back, constipation, and moderate leucorrhœa. She had no difficulty in micturition at any time, nor any bearing-down pains. Although she had been treated both in this country and in America for menorrhagia, no vaginal examination was made till after inversion had taken place. Has latterly enjoyed excellent health; has been quite regular, and has followed, without any discomfort, her occupation as an egg-merchant. Was last unwell on June 15th, 1876, and was regular both as to time and the amount of discharge. Since that time she has suffered greatly from constipation, and noticed that a small tumour used to appear at the vulva when she was at stool. Though she had some dragging pain over pubis, this gave her no anxiety, as she was always able to push the tumour back again with her fingers. On July 30th she took a long walk, and afterwards, as she was sitting at dinner, a large tumour was suddenly protruded from the vulva, and some slight hæmorrhage took place. A few hours afterwards she was seen by Dr. Ryan, at which time she had no symptoms of collapse, her pulse being 90 and her temperature normal. A tumour somewhat larger than a goose's egg was then protruding from the vagina; it was irregularly oval in shape, of a

dark, deeply-congested colour—one might almost say black, and when grasped gave the sensation as of a solid ball of india-rubber. On making a vaginal examination the tumour was found to have a long pedicle, which could be traced upwards as far as the os, by which it was tightly embraced, and the lips of which felt as hard almost as bone. A careful bimanual examination failed to detect the body of the uterus in its normal position, and the finger in the rectum readily made out the tip of sound introduced into the bladder. Dr. Ryan therefore came to the conclusion that it was a case of inversion of the uterus caused by a fibrous tumour, though he was at the time unable to say exactly where the uterus began and the tumour ended. The only symptoms of which the patient complained were a constant desire to pass water, and an uneasy dragging feeling over the pubis when the tumour was allowed to hang unsuspended from the vulva. At no time did she complain of any pain in the tumour, even when it was firmly squeezed, but immediately complained when the pedicle was roughly handled, and especially when any attempt was made to draw the tumour downwards or to rotate it on its axis. On the 30th and 31st of July, Dr. Ryan made prolonged and determined efforts to reduce the inversion, but failed to make any impression on the os, which embraced the pedicle, as he expressed it, "like a vice." The case was seen by several other practitioners, some of whom considered it a case of fibrous polypus, but all of whom considered the tumour irreducible. Two days afterwards it had descended much lower, and, on making a vaginal examination, Dr. Ryan found that the os had disappeared, and that the pedicle of the tumour was continuous all round with the vaginal walls—a further proof, if such had been required, that the case was one of inversion.

On the eighth day after the tumour had appeared externally it began to slough. The patient then developed slight constitutional symptoms, and on August 11th her pulse was 120, and her temperature  $102^{\circ}$ , a condition probably caused by absorption of the decomposed discharge. The treatment consisted in syringing out the vagina thoroughly three or four times daily with a weak solution of carbolic acid, covering the tumour with tenax steeped in carbolic oil, and supporting it with a T bandage, while internally the patient took a mixture of tinct. ferri perchl. and quinine three times a day, with an opiate at night.

I saw her for the first time on August 15th, and found her constitutional symptoms somewhat better than they had been—the pulse being, however, very small and weak, the tongue coated, and her temperature over  $99^{\circ}$ . On placing her in the ordinary obstetric position and exposing the vulva, a large pedunculated tumour was seen, the pedicle being so long that the tumour, enveloped in a mass of tenax, rested without dragging on the bed. On removing the tenax the odour from the part that had become gangrenous was rather strong. On making a careful examination, I found that the pedicle was not inserted into the centre of the tumour, as it would be in a



case of polypus, but into one end of it, and the pedicle seemed to be too long for that of a polypus, there being fully two inches of it outside the vulva, and it was, moreover, of the same diameter throughout. On grasping the tumour it was firm and unyielding, and not in the least sensitive. The pedicle, on the contrary, was softer and very sensitive when squeezed. I therefore had no hesitation in saying that the tumour was a submucous fibroid which had caused inversion, and that the apparent pedicle was the uterus itself. On introducing the finger into the vagina, a quantity of thin, stinking pus escaped. The vagina itself was not at all shortened, and, as before mentioned, the pedicle of the tumour was continuous on all sides with the roof of the vagina. As my diagnosis agreed entirely with that made by Dr. Ryan, and also by Drs. Hartigan and M'Kenna, who were then present, it only remained to determine what operative interference was necessary. After consultation it was agreed, first to remove the tumour, and afterwards to make another attempt to reduce the inversion. In order to avoid as much as possible the risk of opening into the sac of the peritoneum, I thought at first of incising the capsule of the tumour and then enucleating it; but on making a slight incision through the mucous membrane at the base of the tumour, the hæmorrhage, owing to the great congestion of the parts, was so considerable that I determined to use the wire *écraseur* instead. The wire of that instrument was therefore passed over the tumour, and as it was tightened very slowly by one of the gentlemen who assisted me, I kept it as close as possible to the base of the tumour, with the object of cutting through the substance of the tumour rather than through the parenchyma of the uterus, and so preventing any chance of the sac of the peritoneum being opened. On examining the uterus after the removal of the tumour, the place where the latter had been attached was found to be somewhat larger than half-a-crown, and had the shape of a hollow cone. There was no furious hæmorrhage, but a constant oozing took place, which did not cease even when the parts had been touched with the perchloride of iron. As I thought the hæmorrhage might be increased by any subsequent efforts to replace the organ, I brought the edges together with three strong silk sutures, after which there was no more hæmorrhage. I then with great difficulty introduced my left hand into the vagina, the parts being so small and unyielding that the perineum was ruptured to a slight degree before I could accomplish it. The vagina was long, narrow, and very undilatable, and the difficulty of making the least movement with the fingers considerable. After using my utmost endeavours for about a quarter of an hour to reduce the inversion, at the end of which time my hand was quite incapable of further exertion, without having made the slightest impression on the hard rim of the cervix, I withdrew my hand, and a consultation was held as to whether we should leave the case as it was, or should proceed to remove the uterus. After due consideration we determined to adopt

the latter course, our chief reasons for so doing being that the woman's age and unmarried condition did not make the mere saving of the organ of very much importance, while the dangers and difficulties of any attempt at reinverting it were greatly increased by the small, rigid, undilatable condition of the vagina and cervix. Judging from the sloughing of the tumour and the very foetid discharge from the vagina, it also seemed likely that the uterus itself might become gangrenous from the pressure of the cervix; and the rigors and sweatings the woman had already had made us fear septicæmia. There was, of course, in addition to these the fact that Dr. Ryan had made two unsuccessful attempts at reduction, and I had made one. In order to prevent the chance of the cut end of the cervix retracting out of reach, and also to control the hæmorrhage, I placed a strong whipcord ligature round the upper part of the cervix, and drew it tight. Below this I applied the wire of the *écraseur*, and, working the screw slowly, removed a large portion of the body of the uterus. Some hæmorrhage followed the operation, and in consequence of the escape of blood from the congested cervix, the ligature, which before embraced it tightly, became quite loose, and I could pass my finger without difficulty into the peritoneum. Thinking that if I returned the stump the ends might become reinverted and secondary hæmorrhage take place into the peritoneum, I determined to pass three sutures through the part of the uterus that was left behind, and thus prevent the possibility of secondary hæmorrhage, and, as I thought, lessen the probability of peritonitis, by causing immediate union of the two inverted peritoneal surfaces. In this case I left the ligatures long, in order that if there should be any hæmorrhage after I had left, Dr. Ryan could draw the stump down into view, and pass another suture if necessary.

Before the patient was put under chloroform she was given a glass of brandy; as the pulse was very small, quick, and feeble. After the operation, though there had been no sudden collapse when the uterus was removed, the patient was so weak that I gave her some ether subcutaneously (ʒss.), and some opium by the mouth to prevent pain, and then left the patient in the care of Dr. Ryan, who has kindly furnished me with notes of the further progress of the case. She vomited the same evening, and complained of some pain in the abdomen a little below the umbilicus, for which she was given large doses of opium. At no time had she any symptoms of peritonitis, but her temperature was for some days over 100°, and her pulse very small and feeble. A week after the operation she was attacked with diarrhœa, which resisted all remedies, and nearly carried her off. For some days after the operation there was a considerable discharge from the vagina, which was prevented lodging by placing a small plug of tenax inside the vulva, and injections of carbolic acid were used three times a day.

On the 24th of August, or a little more than a week after the operation, Dr. Ryan made a vaginal examination and found that the

stump of the cervix had become reinverted, and that, except for the sutures which projected from the os, no one would have thought any operation had been performed. Her convalescence was most tedious, the diarrhoea frequently returning; but she was removed to her own home on September 11th, or less than a month after the operation, and from that time improved steadily. The sutures did not come away till October 15th, or two months after the operation.

In looking back on this case, almost the first question that presents itself is, "At what time did the complete inversion take place?" There can, I think, be little doubt that the woman had had the tumour for considerably more than fourteen years. How then can we account for the immunity from symptoms which she has enjoyed since the last attack of menorrhagia, six years ago? When Dr. Ryan first saw the case he thought the tumour had somewhat the shape of the interior of the uterus, but it lost this after it had been some time prolapsed. This would incline us to suppose that the tumour had been quite lately expelled from the uterus. I am more disposed to think the whole process took place quite gradually, and that the last attack of menorrhagia, six years ago, was contemporaneous with the extrusion of the tumour from the uterus. Dr. M'Clintock gives a case, in his work on "*Diseases of Women*" (p. 97), which in some respects closely resembles this one, but differs from it chiefly in the fact that at the time of the accident his patient had passed the change of life sixteen years previously.

The next question is as to the propriety of amputating the organ in this case at all. I think, if I met a similar case now, I would not amputate so soon after having removed the tumour that caused the inversion. For I find that so great an authority as Schroeder says that such cases of inversion very generally become spontaneously reinverted within a few days after the tumour has been removed (Schroeder's "*Diseases of Women*," p. 208). Why this should take place so often in such cases, and so rarely in cases that follow labour, does not appear very clear. In the present case, however, there was, I think, considerable danger of gangrene of the uterus or septicæmia if the operation had not been performed.

The point of most interest in the operation itself is, I think, the use of the suture to restrain and prevent hæmorrhage, both after the removal of the tumour and after the amputation of the uterus.

That uncontrollable hæmorrhage should follow the removal of a tumour from an inverted uterus is not strange, if we think of the congestion of the whole organ consequent on its displacement, and also, as in this case, the congestion caused by the constriction of the cervix. In Dr. M'Clintock's case, already alluded to, the hæmorrhage after the removal of the tumour could only be restrained by keeping up constant digital pressure for some hours, though the bleeding surface was not larger than the tip of the finger. Of course hæmorrhage, either primary or secondary, is one of the great sources of danger after the operation. Both are equally impossible if the sutures are



introduced, and they also tend, I think, to lessen the danger of peritonitis—firstly, by preventing any secondary hæmorrhage into the peritoneum; and, secondly, by bringing the two peritoneal surfaces together, and leading to immediate union, such as we see in some cases of operation for ovarian tumour, even a few hours after the surfaces have been brought into apposition. To Marion Sims belongs the credit of having first used them as a means of stopping hæmorrhage after amputation of the uterus. They are now used extensively in Germany to prevent hæmorrhage after amputation of the cervix. The only objection I can see to their use in every case of amputation of the uterus is the difficulty there often is in fixing or bringing into view the stump of the cervix that is left behind. In the present case the uterus was so long that even when I had removed as much as I thought necessary, the end of the stump was still about an inch outside the vulva, and showed no inclination to retract. In a case, however, where the fundus projected only a short distance through the os, we should, I think, draw it well down and pass a strong ligature through the cervix above the point at which we purpose amputating. By this means we can always command the stump after the operation. Hence I think the immediate removal of the uterus by the *écraseur*, followed by the suture, will prove to be safer and more agreeable both to patient and operator than the method adopted by Dr. M'Clintock—viz., applying a ligature for forty-eight or seventy-two hours, and then using the *écraseur*. This latter is the method adopted and strongly recommended by Schroeder as being the least dangerous way of removing the organ, but he recommends the ligature to be left *in situ* for from ten to fourteen days. That reposition is possible by taxis in cases of many years' standing is proved by the success that has attended the efforts of Tyler Smith, Professor White, and many others; and for an instance of what a patient can bear and still survive, I beg to refer you to a case which Thomas gives in his book on the "Diseases of Women" (4th ed., p. 440). This patient underwent taxis at the hands of Professor Henry Miller, of Louisville, five times, for an hour and a half each time, the inflated vaginal air-pessary being used in the interval. She then came under the care of Professor Parvin, who used taxis on five occasions for the space of from four to six hours, and also the vaginal air-pessary in the intervals. Finally, the patient came under the care of Dr. Thomas, who on three occasions used taxis for an hour each time. On the fourth occasion he incised the cervix, which was followed by most violent hæmorrhage, which was with difficulty controlled. On the fifth occasion he made an incision above the pubis, opened the peritoneum, and endeavoured to overcome the constriction of the cervix by dilating it with one hand from above with an instrument made for the purpose, while taxis was made with the other hand in the vagina. During these efforts at reposition the vessel cut previously began to bleed violently, and in making a final effort, in which he succeeded in reducing the organ, he passed one of his



fingers through the roof of the vagina between the uterus and bladder. The patient afterwards nearly died of hæmorrhage, but finally recovered. There are few here, I think, who, after two or three efforts at reposition had failed, would not prefer to expose their patients to the risk of amputation rather than to such treatment as this.

In this case I had another opportunity of proving the usefulness and efficacy of the subcutaneous injection of ether, on which subject I had the honour of reading a paper before this Society some time ago.

Dr. Ryan has since informed me of the interesting, though by no means exceptional fact, that the woman has menstruated twice since the operation; and Dr. Hartigan has noticed a marked increase in the quantity of hair on her face, though whether this is due to the operation or not I cannot pretend to say.

In the *Edinburgh Medical Journal*, for the month of March, there is a most interesting paper by Dr. Matthews Duncan on "Inversion of the Uterus." In one case where he failed to replace the organ, he removed it with the bistoury, having first pierced the cervix with a needle, such as is used for ligaturing hæmorrhoids, armed with strong twine, and ligaturing each half of the cervix separately, the cord being drawn as tight as possible. After the fundus was removed, however, several vessels bled freely, which shows, I think, that, as in my case, after the removal of the fundus the cervix became smaller from the escape of the contained blood, and the ligature therefore of no use. This opinion is further supported by the post-mortem, at which it was found that there was no attempt at union of the two peritoneal surfaces, though the patient had survived the operation for more than a week.

Before concluding I would wish to draw attention to a new method of removing the inverted uterus by means of the elastic ligature. This plan originated with M. Courty, who gives the particulars of a successful case removed by him in this way in the *Annales de Gynécologie* for September, 1876, a *résumé* of which may be found in the *OBSTETRICAL JOURNAL* for March, 1877.

A case is related by Dr. Dibardier, in the January number of the *Annales de Gynécologie*, in which the cure of an inversion of the uterus, probably of thirteen years' standing, was effected by the woman, who was a widow, getting married a second time and again becoming pregnant. If this case is not founded on imperfect observation or imperfect diagnosis, I am inclined to look upon it as one of the most interesting that has ever been recorded.

The CHAIRMAN said that he had met with only two cases of inversion, one of which he succeeded in reducing, but failed in the other.

Dr. KIDD had seen five cases of complete inversion. In the two first amputation was performed by Dr. M'Clintock. In the third case inversion had lasted fourteen years. He failed completely to effect reduction, and the patient suffered very much from the attempt, and left the hospital no better than she entered. In a

fourth case, of six months' standing, already recorded, he effected reduction under chloroform by pressing up first the portion next to the os. In the fifth case there was a very large fibrous tumour growing from the fundus. The tumour was removed by Dr. Roe.

Dr. ROE said that in the case referred to it was not thought prudent at the time to replace the uterus, and the patient was afterwards lost sight of.

Dr. DENHAM mentioned a case recorded by Dr. M'Clintock in which inversion was supposed to be due to a very small fibroid tumour, and which had been at first under his care. He removed the tumour, and Dr. M'Clintock afterwards amputated the uterus. He thought the tumour was not sufficient to cause inversion. In a recent case, due to traction on the funis by a midwife, he was able, under chloroform, to restore the uterus nearly, but not quite. By the following morning the uterus was found in place.

Dr. CHURCHILL mentioned a case in which inversion occurred without any pressure or traction on the cord. It was reduced, but a week later was found again inside out, and restored a second time with difficulty.

Dr. MACAN, in reply, said he did not deny that spontaneous inversion might occur. When reduction was very difficult, Dr. Emmet had adopted the plan of passing silver sutures through the lips of the os, and drawing them together over the fundus, so as to exert a constant upward pressure.

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### *Cases of Polypus Uteri.*

By FLEETWOOD CHURCHILL, M.D., M.R.I.A., Ex-President of the King and Queen's College of Physicians, and of the Obstetrical Society, &c.

At the request of the Hon. Secretary of the Obstetrical Society, I have put together three cases of fibroid polypus of the uterus, more from the interest I feel in the Society, and in acknowledgment of the claims it has upon its members, than because of their intrinsic value. I think, however, they are of some interest—first in being specimens of very large polypi; and, secondly, in these days of ingenious and complicated instruments, as illustrations of the value of simpler agencies.

CASE I.—Miss W., a large, healthy woman, of about forty, of active habits, had latterly been troubled with uterine discharges, red and white, and complained much of a sense of fulness and weight in the pelvis. On making an examination, I found the vagina distended to the utmost, and quite filled by one of the largest polypi I have ever met, whose neck I could barely touch with the point of my finger. So far as I could ascertain, it grew from the cervix, and I proposed to remove it by ligature. This was some thirty years ago, before the *écraseur* had been applied to the removal of these growths. I had the advantage of Dr. M'Clintock's assistance, and

passed a ligature secured by Gooch's canula, but with some misgiving that, owing to the small orifice and limited space in the pelvis, I had only encircled a portion of the polypus, and had not succeeded in reaching the neck. In a day or two, when I endeavoured to tighten the ligature, I found my misgivings were only too true, for the ligature slipped off. I therefore determined to remove it by the scissors, and having provided myself with a strong and long pair, with a vulsellum and the necessaries for plugging the vagina afterwards, I introduced the scissors, guided by my forefinger, up to the pedicle, the tumour having been fixed and drawn down as far as possible by the vulsellum; then changing hands, when necessary, to guard the vagina and cervix, I proceeded gradually to snip through the stalk, which was accomplished in a little time. But the difficulty was by no means over. It is true that I had separated the tumour, but it was so large and firm, and the vaginal orifice so small, that its extraction required as much force as I ever had to employ in extracting the foetal head with the forceps. After this I plugged the vagina fully with French wadding, which I removed in twenty-four hours, and as there was no bleeding I did not plug again. Notwithstanding an attack of phlegmasia dolens about a week afterwards, the lady made a good recovery, and was alive a few years ago.

CASE II.—The second case also occurred in a maiden lady, about thirty. I may remark how very much the difficulty of these operations is increased by the smallness of the orifice through which you have to act. This lady had suffered very much from hæmorrhage for a year or two, and was reduced in strength and blanched. I had to divide the hymen before I could pass in my finger, and then I found a very large polypus growing from the cervix and filling the vagina. Having secured the valuable assistance of Dr. M'Clintock, I determined to remove it by the *écraseur*; but, after a patient trial by Dr. M'Clintock and myself, we found it impossible to pass the wire or chain round the pedicle. Having foreseen the possibility of such a result, I had provided myself with the long scissors, and having fixed the tumour with a vulsellum, I had comparatively little difficulty in snipping across the neck and freeing the tumour, but more in extracting the polypus, after which the vagina was well plugged. On removing the plug, as there was no bleeding, it was not replaced. The lady recovered perfectly.

Now, without wishing for a moment to undervalue the *écraseur*, which I have often used with much satisfaction, I should like to impress on the members that, should it be found too difficult of introduction, we have a much simpler and easy method of operating with the scissors. But they must be long and strong, and one ought to be able to use them with either hand. It is necessary to be provided with a vulsellum or the corkscrew-like instrument invented by Dr. M'Clintock, so as to draw down and fix the tumour. The great fear, of course, in cutting across the stalk of the polypus, is hæmorrhage. I think it rarely occurs to a great extent with large polypi,

but at any rate we ought to be prepared, and as we can plug the vagina with cotton wool or French wadding through a speculum, without pain, and so tightly as to restrain all hæmorrhage, we should not attempt this operation without these appliances. I have found it useful to dip the inner end of the plug in a strong tincture or solution of perchloride of iron. The plug should remain for twenty-four hours, and if there be hæmorrhage it should be repeated until that cease, after which the vagina should be well syringed once or twice a day.

CASE III.—I am tempted to add a third case, in which the removal of the polypus was attained by even simpler means. Some ten or twelve years ago I was summoned to see a lady from whom "something had fallen down;" it was found that the uterus was inverted. I found the lady in bed, and protruding from the vaginal orifice was a tumour certainly five inches long and about three in circumference. It was not the uterus, undoubtedly; it seemed, and I believe was, a fibroid tumour of very lax structure, as though the fibres had been separated from each other. When trying to make out its origin from the cervix uteri, I found that the structure yielded quite easily to my finger; without hæmorrhage, and by a little manipulation, I separated the whole from the cervix, whence it originated, and removed it from the vagina. There was not a drop of blood escaped, and I contented myself with advising astringent injections. The lady recovered well.

I ought to apologise for this meagre production. It is of little value, unless to show to the Society the good-will I shall bear to it to the end of my life.

Dr. ATTHILL had no doubt that where a tumour was sufficiently low down to reach the pedicle with scissors, this was the most satisfactory mode of removal.

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Dr. KIDD read the following communication from Dr. Russell, of Lurgan,

*On the Treatment of Puerperal Convulsions.*

"A healthy young woman, twenty years of age, a primipara, within a few days of her full time, was seized with convulsions, which recurred about every quarter of an hour, and were of a very severe character. The urine was albuminous. I gave her by enema ℥ss. of chloral, followed by a lengthening of the interval between the fits to about two hours. After the next fit she got another enema of the same strength, and the fits did not recur for upwards of four hours. A third enema was given, followed by sound sleep for eight hours. No more fits recurred, and next day she was confined of a dead child, and did well. I send this case for the purpose of eliciting a discussion on a treatment which has been recommended some years ago as more successful than the administration of chloroform by inhalation, and as far superior to the old practice of emptying the womb—bleeding and purgation, &c. In Dr. Churchill's book, he



adduces statistics to show that the ordinary mortality by the old treatment is about 1 in 4, whereas he adduces one instance in the practice of Dr. Brown, who used chloroform in 16 cases, and all recovered. I shall be glad to see in *The Dublin Journal of Medical Science* the report of a discussion on this subject."

Dr. KIDD added—I do not know that any question arises to the obstetric practitioner attended with more difficulty and causing more anxiety than the treatment of puerperal convulsions. I certainly think that if we start with a fixed rule, and apply that rule to all the cases that we meet with, we shall find it an unsuccessful mode of practice. Formerly the practice pretty generally adopted was bleeding and the use of tartar emetic, with minute doses of opium, and purgation. Then the bleeding was given up and tartar emetic was relied on by itself. Then various forms of anæsthetics came into use; of course the question of the propriety of emptying the uterus has also to be considered. There is a class of convulsions in which anæsthetics are specially and peculiarly useful, and are the very best line of treatment that can be adopted. Where the convulsions occur before or during labour, and the patient recovers consciousness perfectly after each attack of convulsions, and the labour is not so far advanced that you can complete it by means of the forceps, or any other operation of the kind, then, I believe, that anæsthetics are very valuable indeed—such as chloral, subcutaneous injections of morphia, or the use of chloroform. I have, under those circumstances, cut short convulsions by subcutaneous injections of morphia, which sometimes answered exceedingly well. I am equally sure that I have seen chloral answer very well. The method suggested by Dr. Russell, of giving chloral by enema, is, I think, a very good one. In other cases I am sure that chloroform has been very useful. Where the patient is comatose, with the fits occurring at short intervals, and the patient not recovering consciousness between the fits, you will not be right in resorting to anæsthetics, and the best plan in such cases is, first, hard purging, and, next, emptying the uterus. I think it was Abercrombie who used the phrase "hard purging" in cases of head affections; and I am sure that in many cases of convulsions I have seen great benefits ensue from hard purging. The practice commonly adopted in the Coombe Hospital is to give a large dose of calomel—from 10 to 20 grains—moistened and mixed with a little sugar, and with it three or four drops of croton oil, and to follow that up with a large dose of castor oil and turpentine. This, in a few hours, induces free purging, and benefits the patient very decidedly. Do not imagine that 20 grains of calomel will act very rapidly. I have seen cases in which it was necessary to repeat it. Whether it is that the nervous system is so oppressed that the medicines do not act, or not, I cannot undertake to say; but, the fact is, that purgatives often act very slowly. I may be allowed to warn some of the younger members of the Society as to another effect we sometimes see from a low state of the nervous system. It

is a common practice, under such circumstances, to put mustard blisters to the calves of the legs. But all of us have seen, more frequently than we wish, the very injurious effects that result from putting mustard blisters to the calves of the legs for any length of time while the patient is in such a state. Not many weeks ago I saw a lady, in the neighbourhood of Dublin, with deep sloughs on each of her legs from mustard blisters, which had been left on them while she was in that comatose condition from puerperal convulsions. My practice, under those circumstances, is, first, hard purging, and, next, emptying the uterus. In some cases, where the os is very small, I dilated it with Barnes's bags, and succeeded in getting it rapidly emptied. I saw one case, some time ago, in which the patient was exactly in that condition. She had had more than thirty fits of convulsions, and had been comatose for a considerable time. The os was not larger than the tips of my finger; she had been bled, she had been shaved, cupped, and leeches, but still the fits were going on. We gave her a large dose of calomel, and I emptied the uterus as quickly as I could, and she never had a fit after the uterus had been emptied, and recovered without any bad symptom. But where you have convulsions setting in after labour, and where there is not much coma, I believe that anæsthetics are peculiarly useful. Whether the anodyne be an opiate or a subcutaneous injection of morphia, I believe that that line of treatment is most useful. On the whole, if I were to sum up my practice, I think that, in certain rare cases, where you have a hot face, throbbing carotids and bounding pulse, you may bleed with advantage; but the cases in which bleeding can be practised with advantage are very few indeed. If you have consciousness perfectly restored, anæsthetics are useful. If there be complete stupor and the fits are going on, avoid anæsthetics and try hard purging and emptying of the uterus. In convulsions occurring after delivery, anæsthetics are peculiarly useful, especially chloral.

The CHAIRMAN thought that there was nothing new in the paper. He thought that, unless the convulsions were merely hysterical, to depend upon an enema of 30 grains of chloral every eighth hour was to trifle with the life of the woman and the child. He would rely most upon free bleeding, as much as ten or twenty ounces.

Dr. ATTHILL would not rely much upon bleeding, and thought it advisable only in very exceptional cases. Chloroform was the most effectual means of checking the attacks, and retarding their recurrence. Chloral was also good, but took a longer time to produce its effects. He mentioned a case of a plethoric girl in whom bleeding and purging entirely failed to arrest the convulsions. They were stopped by chloroform, under which she was kept for eight hours, but returned when it was intermitted, and finally ceased only after delivery by forceps.

Dr. DENHAM did not doubt that bleeding in many cases was highly advantageous. He mentioned a case in which cerebral

hæmorrhage was found after death, and thought that life might have been saved if the patient had been bled early in the convulsions. He had also great faith in purging. Anæsthetics were also useful.

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## Obstetric Summary.

### *Cephalic Version in the Knee-Elbow Position.*

Dr. E. R. Maxson, of Syracuse, U.S.A., describes his method of utilising the postural treatment in the performance of cephalic version in shoulder or other more transverse presentations. By placing the patient in the knee-elbow position, and thus obtaining the aid of gravity in procuring the recession of the shoulder, he declares that he is able to effect cephalic version in most of those cases in which it would otherwise be necessary to turn by the feet, and so expose the child's life to increased risk, especially when it is of large size.

The author makes his patient kneel in the middle of the bed upon folded quilts of a sufficient height—say, from 12 to 18 inches. Her face is brought down forward upon a pillow, so as to bring the body to an angle with the bed of about  $45^{\circ}$ . The operator is to stand on the side opposite to that on which the child's head is situated. The external hand is to press gently upon the uterus, and aid in conducting the head into the superior straight; but the reposition is effected chiefly by internal manipulation. The arm, if prolapsed, is first to be carried back into the uterus. Then the shoulder, or whatever other part of the body may present, is gradually pushed up, and followed up by the hand which is passed into the uterus. Finally, the fingers and thumb, which at first had been kept together, are spread out so as to grasp the head and draw it into the superior straight, aided by the external hand, pressing the base of the uterus towards the centre of the abdomen. After a pain the woman may be turned down upon that side to which the head of the child was directed, the grasp of the internal hand being retained until another pain or two shall have caused the head to become engaged, thus constituting a natural head presentation. The choice of the side upon which the woman should be laid is of importance, in order to overcome the uterine obliquity, which has usually been the cause of the shoulder presentation, prevent its recurrence, and favour the subsequent stages of the labour. In some cases it is found that no internal manipulation is necessary, the *position* and external hand and pressure doing all. Without it, however, it may be a little uncertain which extremity of the child may present.

The author mentions that he first put his method into practice in 1860, and published it in 1867 in the *Philadelphia Medical and Surgical Reporter*, also that it met with high approval from Sir James Simpson, and other eminent obstetricians.—*American Practitioner*, March, 1877.

*A Second Successful Case of Gastro-elytrotomy.*

Professor Skene, whose first successful case of gastro-elytrotomy was recorded in the *OBSTETRICAL JOURNAL*, vol. iv. p. 129, has again performed this operation under very unfavourable circumstances, with a successful result both to mother and child. The patient was an unmarried Bohemian girl, aged thirty-seven, much deformed. She became pregnant, but concealed her condition from her relatives, with whom she lived, up to the full period of gestation. When Professor Skene saw her she had been in labour three days, the membranes having ruptured almost at the commencement. There was a well-marked forward curvature of the spine in the lumbar region, so that the sacrum formed a right angle with the axis of the spinal column; the symphysis pubis was deeper than normal. The conjugate diameter was estimated by Professor Skene at not more than  $1\frac{1}{2}$  inches; by Dr. Schmitzer, who first saw the case, at  $1\frac{1}{4}$  inches. The thighs were ankylosed to the pelvis at nearly a right angle to the body, and the knees could not be separated more than an inch and a half. A number of deep abscess-scars about the hips gave evidence of former hip-joint disease of both sides.

It was decided, after dilatation of the cervix, to deliver by gastro-elytrotomy, which operation consists in making an incision from the symphysis pubis to the anterior superior spine of the ilium, lifting up and holding back the peritoneum, opening the vagina above the pelvic brim, and so extracting the fœtus without opening the peritoneal cavity. The cervix having been with difficulty dilated to  $2\frac{1}{2}$  inches, the operation was undertaken on the fourth day from the commencement of labour, the temperature being then  $102^{\circ}5$ , pulse 98. The operation presented unusual difficulties, partly on account of the ankylosis of the thigh, but still more because all the tissues were matted together and obscured by the products of previous inflammation. Although Professor Skene took great care to avoid the bladder—having found, in his former operation, that the incision extended into it during delivery—yet it was wounded just opposite the anterior superior spine of the ilium, a place where one would not expect to find it. It was considered impossible to perform version on account of the firm contraction of the uterus, and the child was therefore extracted by forceps, after considerable difficulty had been encountered in applying them. Although asphyxiated, it was restored by artificial respiration.

The patient did well, but the urine soon began to accumulate in the vagina, which was small and contracted, and well up through the abdominal wound. Eventually she was removed into hospital, and a drainage-tube was passed in at the fistulous opening, and out through the vagina. It was finally removed about six weeks after the operation, and the urine then flowed from the vagina only. About ten days later the vesico-vaginal fistula had spontaneously closed. The baby prospered for a time, but died when eighteen days old, from bad feeding and care.—*American Journal of Obstetrics*, October, 1877.



*Cephalotribe, or Cranioklast.*

In the *Archiv für Gynäkologie*, B. xi. H. 3, Dr. Max Wiener discusses the relative advantages of the cephalotribe and cranioklast in embryotomy and extraction, and brings forward evidence derived from the statistics of the Lying-in Hospital and Poliklinik at Breslau. The cranioklast referred to is the improved form, based upon the original model of Sir James Simpson, as now used at Vienna under Professor Carl Braun, and widely elsewhere in Germany. It is provided with a compressing-screw, and differs little from the so-called craniotomy forceps of Dr. Barnes, commonly used in England. At Breslau it is used solely as an extractor, and not to break up the bones, the solid blade being inserted into the cranial cavity, the fenestrated blade passed outside the scalp.

Dr. Wiener objects to the cephalotribe that while flattening the cranium in one direction it expands it in the opposite, and that, the blades being applied laterally to the pelvis, the expanded direction coincides with the conjugate diameter. The plan of rotating the blades through a quarter circle after crushing, he considers to involve a danger of injuring soft parts in the rotation, and to have the disadvantage of destroying the correspondence of the curve of the instrument with that of the pelvis. The expedient of repeated cephalotripsy he finds, from his statistics, to have proved especially dangerous to the mothers.

To the cranioklast the advantages are ascribed that its thinner blades are introduced more easily, and with less risk of lesion, and are also so overlapped by the bulging of soft parts of the head that they do no damage during extraction. The head again is not expanded in any transverse diameter, but is gradually elongated into a long conical wedge, with its apex foremost. Out of seventy-eight cases in which the cephalotribe was applied, it was found necessary in eleven to resort to some other means of extraction; while out of forty-six cases in which the cranioklast was employed, extraction by its means failed in only seven. And, since 1872, no case of failure with the cranioklast has occurred, skill in its employment having become greater. It is now found scarcely ever to slip, if the inner blade be passed up as close as possible to the base of the skull, and the outer blade fixed over the jaw and region of the ear, as recommended by Sir James Simpson.

The relative results have been the following:—Out of forty-three women delivered with the cephalotribe twenty-one died, sixteen of puerperal fever, two from ruptured uterus. Among these were found eight times rupture of the cervix, once detachment of the anterior lip, twice gangrene of the uterus opposite the promontory, once perforation reaching the peritoneal cavity, once gangrene of the vagina, three times suppuration of the cervix, once suppuration of the symphysis, once gangrene of cervical mucous membrane. The cephalotribe slipped off eight times; repeated cephalotripsy was required

six times, twice it was necessary to resort to version. Vesico-vaginal fistulæ resulted twice.

Of fifty-two women delivered by the cranioklast, nineteen died, fifteen of puerperal fever, two from ruptured uterus. At the autopsies, suppuration of the symphysis was found once, and once a small slough opposite the promontory, resulting in perforation.

In the most difficult cases, the mode of extracting adopted was to induce a face presentation (the advantage of which has been shown in Britain by Dr. Braxton Hicks), and then place the inner blade in the mouth, the outer over the face and brow, and so extract chin foremost. By this means the author believes that any cranium which can possibly pass through the pelvis can be extracted. He quotes a paper by Dr. Mundé, in the *American Journal of Obstetrics*, vol. vi., as confirming, from the experience of American practice, the superiority of the cranioklast thus used (or as it should more correctly be called cranio(ex)tractor) over the cephalotribe.

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#### *A Successful Case of Cæsarian Section.*

Dr. E. W. Jenks records a case in which Cæsarian section was successfully performed upon a patient who had been already seven days in labour, in charge of women. The patient was a primipara, twenty-four years old, and the left shoulder was presenting. The pelvis was rachitic, the conjugate diameter not exceeding two inches. The author found that he could barely insert three fingers above the brim, and could not possibly pass his hand beyond it, even in the knee-elbow position; version was thus shown to be an impossibility. He then decided upon Cæsarian section, thinking that delivery by embryotomy and extraction piecemeal would be more dangerous under the circumstances. The foetal heart-sounds had ceased, and offensive fluid was escaping from the vagina, but the presenting arm showed no signs of decomposition.

The incision was made from about an inch and a half above the pubes to the umbilicus, a distance of at least seven inches; and a corresponding cut was made in the uterus. The foetus was seized by the feet, and readily extracted; it was dead, but did not appear to have been so long. The placenta was readily expelled through the incision by the uterine contractions, and with it about six ounces of putrid fluid, of which a small quantity escaped into the peritoneal cavity, in spite of all precautions. The uterus was then carefully sponged out. It contracted, but not sufficiently to prevent blood escaping throughout the entire length of the incision, while from the severed sinuses it flowed in large stream. The uterine rent was accordingly closed by four silver-wire sutures, passed throughout the whole thickness of the uterine substance, the ends being turned down into the line of incision. The abdominal cavity was afterwards sponged out. About sixteen hours after the operation the temperature was 103°, and pulse 120, the highest point reached; but twenty-four

hours later the patient was as comfortable as after an easy labour, and convalescence proceeded without interruption.

The author considers that gastro-elytrotomy would have been less favourable in this case, as not allowing the sponging out of the uterus. He quotes the statistics published by Dr. Harris,\* according to which, in seventeen cases of Cæsarian section, performed during or at the close of the first day of labour,  $73\frac{1}{3}$  per cent. of women and  $86\frac{2}{3}$  per cent. of children were saved, as proving that Cæsarian section would really be the less dangerous operation in many cases in which embryotomy is now performed in Great Britain.—*American Journal of Obstetrics*, October, 1877.

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*Extra-Uterine Foetation fatal Five Months after Term.*

Dr. Guichard, of Angers, relates a case of extra-uterine foetation, which illustrates the dangers which may arise when no active interference is undertaken. The patient was thirty-four years old, and was admitted into the Maternité on May 7th, 1876. She had had two children, the last seven years before, since which she had had perfect health, and menses had been regular. Towards May, 1873, menstruation ceased, and she had all the indications of pregnancy. In September she lost blood on several occasions, and about this time suffered some abdominal pain. Henceforward she felt much inconvenience in following her household occupations. The abdomen continued to enlarge, and in November and December she felt foetal movements; but towards the end of January, or in the course of the ninth month, these movements ceased. In the first days of February pains like labour pains came on, and she lost some blood. A fleshy substance also passed, which was taken by the medical attendant for placenta, but which was probably the uterine decidua. The loss of blood continued some time, after which it ceased and did not return. The breasts also enlarged and secreted milk, which was still present in them at the time of her admission. General health had improved, but the inconvenience of the tumour led her to seek admission to the hospital. There was then a tumour on the right side of the abdomen, having a firm mass at the top, and other hard parts apparently contained in fluid. This was diagnosed as an extra-uterine foetation, the foetus lying with its head uppermost. The tumour did not descend into the pelvis. The os was soft and somewhat open, and, by speculum, had the purple tint characteristic of pregnancy. The sound passed easily, and the uterus was movable by its means, although some resistance was felt. A teaspoonful of yellowish fluid escaped by the side. A quarter of an hour after the use of the sound the patient was seized by severe colic, and symptoms of acute peritonitis became developed, probably set up by the

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\* *American Journal of Obstetrics*, Nov. 1871, and Feb. 1872.

rupture of some adhesions. During the following seven weeks the acute symptoms were subdued, tympanitis diminished, the tumour ceased to be tender, and the peritonitis lapsed into a chronic form. Nutrition, however, failed; there was vomiting and foetid diarrhoea, and the patient succumbed to hectic fever.

At the autopsy the intestines were found united by numerous bands of adhesion. The sac was very adherent to the abdominal wall in front, and at this level greenish-yellow pus escaped from it. The foetus appeared to have reached full development. The sac containing it was full of pus, and the placenta broken down by purulent infiltration. The left uterine appendages were free. The inner half of the right Fallopian tube was free, its outer half was attached to the cyst, especially by its fimbriated extremity, but was not enlarged. The right ovary was flattened and elongated, closely connected with the inferior portion of the cyst, in whose wall it was incorporated. The author concludes that the ovum had become developed either on the surface of the ovary, or in the actual ovarian tissue, probably the former. Judging by the result, he now thinks that life might perhaps have been saved by operative interference.—*Archives de Tocologie*, August, 1877.

## *Gynæcic Summary.*

### *Intra-Uterine Medication.*

In a paper read before the Medical Association of Trieste, Dr. Carlo Liebman treats of the morbid conditions calling for the use of intra-uterine medication, the mode of action of the various agents employed, and the mode of applying them. The chief symptom which he regards as indicating their employment is metrorrhagia, and their sole use to cure special morbid changes in the uterine mucous membrane, which are produced by idiopathic or symptomatic catarrh, and are often the cause of hæmorrhage. For the milder forms of corporeal endometritis he prefers nitrate of silver, regarding it as a remedy which is always inoffensive, but only useful when the endometritis is not accompanied by persistent hæmorrhage. He uses it in the solid form, and applies it by means of the porte-caustique of Chiari, with which the stick of caustic is again withdrawn, and not left within the uterus. The duration of application recommended is from five to ten minutes. He first wipes out the uterine cavity with a swab of cotton, and then introduces the instrument through a Ferguson's speculum. When it has been passed up to the internal os, the speculum is withdrawn sufficiently to allow the handle to be depressed, and the porte-caustique passed on to the fundus. The speculum is then gently replaced, the os uteri being brought into its field by the stem of the sound. After withdrawing the porte-caustique cold water is injected into the speculum, and a tampon of glycerine



left for twelve hours in the vagina. Following this method, the author finds that no pain is produced at the time or afterwards, and he allows the patients to walk home immediately after the treatment. In cases, however, in which a small quantity of nitrate of silver has been left in the uterine cavity he has found severe uterine colic to be produced for some hours, or even for a day or two; otherwise, the only inconvenience resulting he finds to be the production of a slight hæmorrhage. The plan of depositing medicated crayons of astringent material within the uterine cavity he denounces as inefficacious and dangerous. After employing crayons of tannic acid, although all possible precautions were used, he has always found violent colic to be set up, and has twice seen severe and protracted symptoms produced. In one patient uterine congestion, if not inflammation, followed, and lasted several days; in another, pelvic peritonitis of several weeks duration. The introduction of powder or ointment by means of a tube and piston, although praised by Schroeder and Barnes, he speaks of as an obsolete method.

The author next discusses the more severe form of endometritis, which is accompanied by fungoid granulations of the mucous membrane. Of the curette he does not speak from personal experience in such cases, but he regards it as dangerous, because within the uterine cavity it cannot be guided either by the eye or the finger, and he does not believe it possible to scrape accurately the whole of the mucous membrane. In three cases he has tried the application of strong nitric acid, according to the method recommended by Dr. Atthill, and on each occasion it was followed by a prompt and complete success. The three cases are related at length. The first patient was fifty-one years old, a widow, mother of seven children. She had had continual and copious metrorrhagia for two years, and was reduced to great anæmia. The cervix was dilated in the course of four days by four successive sponge-tents. Spasm of the internal os still resisted the entrance of the finger, but was overcome by inserting the blades of long forceps, and forcibly separating them. The mucous membrane was then found to be thickened and velvety. After wiping out the uterus, the nitric acid was applied for three minutes. It caused some pain, and was followed by some elevation of temperature, the latter of which the author ascribes to the forcible dilatation, since it did not occur in the other two cases. The metrorrhagia was cured, and did not recur. The second patient was fifty years old; had never had children. For about a year menstruation had been diminishing, but she had continually a sanguineous semi-purulent discharge, had lost flesh, and had the cachectic appearance of one suffering from cancer. The uterus was small and movable, with mucous polypi in the cervical canal. The removal of these and repeated cauterisation of the cervical canal were of no avail. The cervix was then dilated with difficulty, in the course of twelve days, laminaria tents being used at first. The cavity of the body as well as the cervix was found to be covered with irregular excrescences.

In this case, although the cauterisation produced much pain, the swab of nitric acid was twice introduced. Tenderness of the uterus for some days followed, but no pain nor febrile symptom. The morbid discharge was completely cured, but the cervical canal became gradually narrowed, and eventually obliterated, a result which in this case was no disadvantage. The third patient was twenty-three years old, and was reduced to great anæmia by nine months metrorrhagia, commencing from an abortion. The cervix was easily dilated, and nothing abnormal found except redness of the mucous membrane. The nitric acid was applied through a cylindrical cervical speculum of vulcanite, there was no reaction, and the hæmorrhage was cured.

The author next discusses the method of intra-uterine injections. He considers that this treatment is called for and that the methods hitherto mentioned are inefficacious in the following cases:—  
1. When the uterine cavity is notably enlarged, as in some cases of chronic metritis, so that a swab of cotton cannot be effectually applied to the whole surface. 2. In cases of interstitial and submucous fibroids, enlarging and distorting the uterine cavity. 3. When there is no profound alteration of mucous membrane, and the fluid is intended to act as a hæmostatic, and is therefore required to be in adequate quantity. As to the dangers which may attend this proceeding, he believes that in some cases they may be dependent on the passage of fluid through the Fallopian tubes, as proved by certain cases verified by autopsy, but that in others they result from too great an intra-uterine pressure being produced by the injection, from clots being left behind from coagulation caused by the fluid used, or from the use of too caustic a fluid. To secure a free outflow he considers it not sufficient to dilate the cervix previously, since the internal os may rapidly undergo a spasmodic contraction. He regards the only safe plan to be the use of a double-action syringe, with lateral apertures large enough not to be easily blocked, and he does not then find any dilatation to be necessary in most cases, using a tube of the size of No. 14 catheter. He attaches much importance also to washing out the uterine cavity with a stream of water, before the medicated fluid is injected. The fluid he uses is either the tincture of iodine of the Austrian pharmacopœia, or perchloride of iron dissolved in glycerine in the proportion of one to ten. He records one case in which a perilous peritonitis was set up. In this he made use of Braun's syringe, which is not one of double action, and injected a concentrated solution of nitrate of silver.

The author gives some details as to his method of preliminary dilatation. He prefers sponge to laminaria tents, unless the cervix is very small, as being less liable to cause pain. He never leaves them more than ten hours, and withdraws them sooner if any pain is produced. He has no fear of using a good many tents in succession, but instead of introducing each upon the withdrawal of the last, he always leaves the uterus twelve hours' rest, and sometimes a longer period. He also suspends the treatment if any tenderness

arises. In this way the dilatation becomes more tedious, and may extend to ten or twelve days, but he considers that it is far safer.—*Archives de Tocologie*, April and May, 1877.

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*Menstruation after Double Ovariectomy, associated with Hæmorrhage from the Pedicles.*

In a paper read before the Société de Chirurgie, MM. Verneuil and Terrier record a case in which regular menstruation occurred after double ovariectomy. The patient was thirty-six years old, and had a large multilocular ovarian cyst. She had suffered from pneumonia and phlegmasia dolens of both legs, and the cyst had been twice tapped. Great distension had recurred, there was much emaciation and dyspnoea, and ovariectomy was performed as a last resort. The tumour was extracted with difficulty on account of firm parietal adhesions. The other ovary was found to contain small cysts, and was removed. Both pedicles were fixed by pins in the angle of the wound, the operation having lasted three hours. The patient eventually recovered, but small parietal abscesses were formed in the track of the silver sutures used, and a small fistulous opening remained at the site of the double pedicle, and was not completely cicatrised till nine months afterwards. The operation took place on July 6, 1875. No uterine hæmorrhage took place till the following December. On December 25th menstruation appeared, was very profuse for four days, and lasted in all six days. Menses did not recur till February 20, but were then so abundant as to compel the patient to keep in bed, lasting for ten days. On this occasion somewhat considerable bleeding occurred from the fistula at the site of the pedicle, appearing to have its origin in a strawberry-like prominence. The same phenomenon recurred in at least three subsequent menstrual periods. Until the summer of 1876, menstruation only occurred each alternate month; from that time it became regular with an interval of from four to five days over a month, lasting regularly from six to eight days, and accompanied by neuralgic pain in the left breast and arm.—*Annales de Gynécologie*, August, 1877.

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*Pædiatric Summary.*

*A New Sign of Respiration in the New-born Child.*

Dr. Gellé describes a new sign of respiration in the new-born child, derived from examination of the internal ear, which he considers to have considerable medico-legal importance, and in certain cases to give more information than can be derived from the examination of the lungs.

In the foetus, the tympanic cavity is virtual. The middle ear, deprived of air, is filled with a gelatiniform substance, which constitutes a veritable tissue. This consists of elements such as are found in mucous membranes of rapid evolution, is traversed by



numerous capillaries, is not washed away by a stream of water, and, even twenty days after death, retains its remarkable characters.

When the fœtus has succumbed during parturition, the tympanic cavity is without air, and contains the same gelatiniform substance, but the increased vascularity, the hæmorrhagic aspect, and the liquefaction of the contents of the cavity, present characteristic signs of asphyxia.

When the child is born in a healthy condition, the first respiratory movements cause almost instantaneously a complete change in the state of the tympanic cavity. The cavity becomes filled with air through the Fallopian tube, and the gelatiniform substance, constituted by a sort of œdematous development of the mucous membrane, disappears by the shrinking of this mucous membrane. The author attributes this sudden change to the immediate and marked diminution of intra-vascular pressure, caused by the entrance of air and blood into the lungs.

When artificial respiration has been performed, there is found in the tympanic cavities, or in one of them, a sanguinolent liquid more or less mixed with air, but the foetal aspect has not completely disappeared. In such cases, therefore, the conditions of the ears afford better evidence than that of the lungs whether the child has breathed spontaneously or not.—*Lyon Médical*, February, 1877.

#### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

"Cyclopædia of the Practice of Medicine." Dr. H. Von Ziemssen. Vol. xvi. "Diseases of the Locomotive Apparatus." London: Sampson, Low, and Co. Pp. 1060.

"The Mechanism of Natural and of Artificial Labour in Narrow Pelves." By William Goodell, A.M., M.D. Philadelphia: 1877.

"Maternal Impressions." By Robert J. Lee, M.A., M.D., F.R.C.P. London: Smith, Elder, and Co.

"Diseases of Women." By Lawson Tait, F.R.C.S. Williams and Norgate. 1877. Pp. 310.

"Practical Gynæcology. A Handbook of the Diseases of Women." By Heywood Smith, M.A., M.D. Oxon. London: J. and A. Churchill. Pp. 184.

Communications received from Prof. Stephenson, Dr. Greenhalgh, Dr. Aveling, Dr. R. J. Lee, Dr. Fothergill, Mr. Ernest Hart, Dr. Paterson, Mr. W. Adams, Dr. Newcombe, Dr. de Gorrequer Griffith, Dr. J. Williams, the Secretaries of the Statistical Society, and Messrs. Sampson, Low, and Co.

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Original Communications.

INFLUENCE OF POSTURE ON WOMEN.

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(Continued from p. 31, vol. v.)

CHAPTER V.

POSTURE AS INDICATING ABNORMAL CONDITIONS OF  
THE PELVIC ORGANS.

THE difficulty of ascertaining the condition of internal organs when diseased is so great that at all times every available method of diagnosis has been eagerly sought and adopted. Hippocrates, in his "Book of Prognostics,"\* draws attention to the importance of position as indicative of

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\* "It is well when the patient is found by his physician reclining upon either his right or his left side, having his hands, neck, and legs slightly bent, and the whole body lying in a relaxed state, for thus the most of persons in health recline, and these are the best of postures which most resemble those of healthy persons. But to lie upon one's back with the hands, neck, and legs extended, is far less favourable. And if the patient incline forward and sink down to the foot of the bed, it is a still more dangerous symptom ; but if he be found with his feet naked and not sufficiently warm, and the hands, neck, and legs be tossed about in a disorderly manner and naked, it is bad, for it indicates aberration of intellect. It is a deadly symptom, also, when the patient sleeps constantly with his mouth open, having his legs strongly bent and plaited together while he lies on his back ; and to lie upon one's belly when not habitual to the patient to sleep thus when in good health, indicates delirium or pain in the abdominal regions. And for the patient to wish to sit erect at the acme of the disease is a bad symptom in all acute diseases, but particularly so in pneumonia."—*Sec. III. Adams's Translation.*

disease, and since his time all medical writers have more or less minutely pointed out its diagnostic value.

It will be found that the majority of postures taken by patients is assumed by them to relax muscular tension, to insure rest, to relieve hypostatic hyperemy, to rectify displacements, to maintain corporeal equilibrium, or to remove or effect external pressure. All these are adopted chiefly for one end—the avoidance of pain, and all of them are curative in their effects, and excellent examples of what has been appropriately called “Natural Therapeutics.” They may act simply or in combination, and their application to individual diseases of the pelvic organs must be left to the judgment of the practitioner.

### *1. To Relax Muscular Tension.*

Every medical man must be familiar with the postures assumed by patients suffering from painful affections of the pelvic contents. If a woman thus afflicted be observed standing or walking, the spine will be found flexed, the pelvic inclination debased, and the body bent forward to a marked degree. If she be sitting, the body will be inclined anteriorly, and occasionally more to one side than the other if the pain has a lateral origin. If she be lying down, she will usually be found upon the back, with the spine flexed mechanically and the knees raised. If she assume the lateral recumbent posture, the same flexion of the spine and thighs upon the trunk will be noticed.

By all these postures the muscular walls of the abdomen are relaxed, and consequently its contents are pressed with less force upon the painful organs in the pelvic cavity.

### *2. To Insure Rest.*

In cases of pelvic inflammation, something more than the relaxation of the abdominal muscles is required to relieve pain. It will be found that a patient thus affected most carefully maintains the posture she has assumed. If she be standing or walking, the body will be observed to be bent always at the same angle ; if she be sitting, the elbows will be used to preserve the exact posture, and in bed the spine

will be found flexed mechanically by a pillow under the shoulders, and the thighs raised and held in position by the feet resting on the bed.

By all these contrivances the pelvic organs are held as far as possible motionless, and much pain is avoided.

### *3. To Prevent External Pressure.*

To avoid pain from external pressure, patients are compelled to assume many different postures. When standing, the weight of skirts suspended from the waist is sometimes a cause of pain, but perhaps no particular remedial posture is in this case adopted to relieve it. In sitting, diseased conditions of the vulva, urethra, and anus cause patients to sit awkwardly upon one buttock, or upon the edge of the seat. When recumbent, the pressure of the surface rested upon cannot in most painful conditions of the pelvic organs be endured. The back is then the only part which can bear pressure with impunity, and consequently in the dorsal recumbent posture patients are compelled to lie for weeks or months. When the disease affects only one side, the sound side may be laid upon ; but this is far from being invariably the case, for the lateral displacement of the affected organ or parts which results, sometimes produces great pain.

### *4. To Effect External Pressure.*

Where pain is relieved by pressure, patients learn to assume remedial postures. Compression of the pelvic contents is effected in various ways. When standing, a woman relieves herself by extending her elbows, and pressing downward with her hands. When sitting, by leaning forward, forcibly flexing the thighs upon the abdomen, and contracting the abdominal muscles ; and when recumbent, by lying upon her face with the hands or some other resistant body placed under the lower part of the abdomen. The writer has met with the case of a poor girl who suffered intensely at her menstrual periods, and who discovered that she could relieve her pain by pressure. To effect this she would lie with the lower part of her abdomen upon the wooden frame at the edge of the bed, with her legs on a chair and her head

and shoulders in the middle of the bed. In this posture she every month procured ease and sleep. She was completely cured by division of the cervix.

Pain in the back, caused by long maintenance of the erect posture, and reflected by some abnormal condition of the pelvic organs, may often be relieved by pressure ; and women finding this out may frequently be seen standing with their hands firmly compressing the painful spot.

Hysterical attacks, connected with a painful condition of the ovary, may sometimes be cut short by applying firm pressure to the affected organ, and this can best be done when the patient is on her back.

#### *5. To Remove Hypostatic Hyperemy.*

Women who are subject to hyperemy of the pelvic organs cannot stand or sit up for any length of time without feeling weight, fulness, dragging, and pain in the back and region of the pelvis. So severe is this, that they are obliged to disregard the conventionalities of society, and sit when others stand, or lie down when others sit. This subject has been fully considered in the Third Chapter.

#### *6. To Rectify Displacements.*

In all displacements of the pelvic viscera, patients unconsciously find out and adopt the posture which rectifies the dislocation causing their pain. She who suffers from uterine antrorsion finds herself most comfortable when lying on her back. When retrorsion is the cause of pain, the patient lies upon the face, and when dextrorsion or sinistrorsion exists, relief is obtained by the woman lying on the side opposite to that toward which the womb falls. If a pelvic organ be highly hyperemic and painful, its slightest displacement causes pain. When this is the case, dorsal recumbency is the only posture tolerable, for lying upon the side causes lateral displacement and pain, increasing in intensity with the prolongation of the posture.

When displacement upward of an enlarged ovary or uterus fills the abdomen, and encroaches upon the thoracic cavity, the functions of the stomach, heart, and lungs are disturbed.



The pressure which causes these functional derangements may be removed by the patient sitting up, when the tumour gravitates from the affected organs, and relief is obtained.

The numerous interesting postures indicating loosening of the pelvic articulations, and adopted for the relief of the patient, have been fully described under the heading "Anomalies of the Pelvic Articulations."

#### *7. To Maintain Corporeal Equilibrium.*

Tumours of the pelvic organs rising into the abdomen, like the gravid uterus in an advanced state of pregnancy, necessarily produce change of posture. To poise the trunk upon the heads of the femora, the weight in front has to be counterbalanced by throwing the shoulders and upper part of the trunk backward. In phantom tumours and spurious pregnancy this change of position does not take place; and thus a good postural diagnostic sign is afforded.

Lameness, paralysis, and contraction of the extremities should not be forgotten as possible postural signs of uterine and ovarian disorder; nor should spinal curvatures, and other corporeal deformities, be neglected, as indications of pelvic distortion.

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### CHAPTER VI.

#### POSTURE IN GYNECIC EXAMINATIONS AND OPERATIONS.

THIS is a subject of the greatest practical importance, for if a patient be not placed in a suitable position, the information sought during an examination may be altogether missed, or the success desired in an operation entirely lost. The proper posture for each proceeding should be well known beforehand. Without this knowledge the patient will often have to submit to unnecessary pain and annoyance, and the practitioner to loss of time and reputation.

##### *1. The Vulva.*

(a.) *Examinations.*—As a rule, all examinations of the external female genital organs are best made with the patient in a dorsal position, with the knees separated. In

the lateral recumbent posture the labia are naturally approximated, and the parts situated anteriorly cannot be properly brought into view. If a tactual examination only be required, the patient may remain in bed, with her body in the ordinary direction. Visual examinations cannot be satisfactorily conducted without placing the woman across the bed, in a good light, with her hips near the edge, but not so near as to prevent her resting her feet on the bed. In all examinations, whether upon the side or back, the proceeding is rendered more decent, and less likely to offend the delicacy of the patient, by throwing over her lower extremities a large light cloth, or shawl.

Hernia of the vulva may be distinguished from other tumours by examining the patient when upright and recumbent, increased protrusion in the former posture being the diagnostic symptom.

(b.) *Operations.*—In all applications, ablations, or other operative procedures upon the labia, nymphæ, clitoris, hymen, and adjacent structures, the dorsal position is the best. In this posture anesthetics, when necessary, may be conveniently administered, visual and tactual examination is rendered easy, and manipulation, consequently, proportionately facilitated.

## 2. *The Perineum.*

(a.) *Examinations.*—The perineum may be best examined when the patient is on her side. She should be laid across the bed or couch, with the hips near its edge, and knees drawn up.

(b.) *Operations.*—In perineal plastic operations, the patient should be placed on her back upon a table, the buttocks brought near its edge, and the knees held up, and well back, by assistants, crutches fixed to the table, or other mechanical contrivances.

## 3. *The Urethra.*

(a.) *Examinations.*—The meatus and canal of the urethra can only be examined visually when the patient is on her back, with the knees separated. Tactual exploration of the meatus can be made when the woman is in any posture, but

the amount of information thus obtained is scarcely ever sufficient.

(b.) *Operations*.—Passing a female catheter is the most frequent operation performed in connexion with the urethra. It is most easily done when the patient is on her back. If in bed, she need not change the position of her body. It is only necessary that she should open her legs sufficiently to enable the operator to pass one finger into the mouth of the vagina as a guide to the introduction of the instrument, and to place a dish between the thighs. If artificial light be required to find the meatus, this posture still holds good, but if daylight must be used, the patient should be placed with the urethral orifice opposite a window.

The dorsal posture is also the best for making applications, dilating, removing small tumours, and, in fact, for all operations upon the urethra.

#### 4. *The Bladder.*

(a.) *Examinations*.—The bladder can be most effectively examined when the patient is on her back. In this posture the bi-manual method can be best employed, as also can the tactual manœuvres for detecting distension of the organ by urine, or for exploring it by the finger after urethral dilatation.

(b.) *Operations*.—In lithotrity, the patient is best placed in the dorsal reclining posture. If, however, the stone cannot be seized when she is in this position, recumbent and lateral postures should be tried. Vesical injections are also best performed when the patient is on her back.

#### 5. *The Vagina.*

(a.) *Examinations*.—Of all the pelvic organs this is the one which directly or indirectly is most frequently examined, and it is no exaggeration to state that upon the delicacy, skill, and gentleness which is exercised in its accomplishment, a large amount of the gynecologist's success in practice depends. Notwithstanding scientific eminence and great personal advantages, any awkwardness or roughness in the practitioner's manipulations will certainly soon become

known, and his examinations be dreaded and avoided. On the other hand, vaginal explorations may be rendered painful from the undue delicacy of the medical man who will not require his patient to assume the posture which renders them most easy.

(*a.*) *Tactual Examinations.*—When it is intended to find out the condition of the vagina by touch, the patient should be placed upon her left side. In this position every part of the canal can be explored by the finger. If, however, it be desirable to determine the extent of a rectocele or a cystocele, the patient must be placed on her back or upright, for in the lateral recumbent postures the labia are closed and the protruding walls compressed. A varicose condition of the vaginal walls can be felt more distinctly when the patient is erect.

(*β.*) *Visual Examinations.*—The posture used in inspecting the vagina must vary with the part of its walls which is desired to be brought into view, and the kind of speculum intended to be used. A cursory examination of the vaginal walls can be made with a cylindrical speculum while the patient is on her side; but if a more minute investigation is required, she must either be placed in a semi-prone position with her hips raised and her shoulders low, or on her back with the knees separated. In these two latter postures, with specula of one or more blades, any portion of the vagina can be clearly seen. Small fistulous openings are sometimes most difficult to discover. A minute vesico-vaginal fistula is best found when the patient is on her back, for in this position milk injected into the bladder gravitates through the aperture and is readily seen if the anterior wall of the vagina has been properly brought into view. A small recto-vaginal fistula in the lower part of the septum may be most readily detected when the patient is on her side, by passing a finger into the rectum and everting the vaginal wall.

All vaginal specula can be introduced with the greatest facility while the patient is on her back, for in the lateral positions the labia are more or less closely approximated, and the vaginal orifice thereby contracted.



(b.) *Operations.*—Most vaginal operations can be best performed when the patient lies upon a table in the dorsal position, with the knees held up and back by assistants. Experienced operators, however, say that some cases of vesico-vaginal fistula are more readily operated on when the patient kneels, with her body resting in a horizontal posture. In all operations upon the anterior wall of the vagina, dorsal recumbency has the advantage of causing the blood to gravitate from the bleeding surface. It also has the advantage, in operating for vesico-vaginal fistula, of preventing blood from falling into and clotting in the bladder.

Vaginal injections should never be given when the patient's shoulders are lower than her hips, for gravitation of the pelvic contents from their cavity may cause uterine aspiration, and serious results. In syringing the vagina, the patient may safely sit or lie upon her side or back if the shoulders be well raised.

## 6. *The Uterus.*

(a.) *Examination.*—Ingenuity has been taxed to the uttermost in providing numerous modes of investigating the various conditions of this organ. Many of these can only be mastered by great attention, and considerable patience and experience.

(a.) *Tactual Examination.*—Immediate examination of the uterus by touch is confined to its vaginal portion, and to its cavity after dilatation. The condition of the vaginal portion may be discovered by the finger while the patient lies on her side. The cavity can be best explored while she rests in the dorsal posture; for thus placed, the uterus can be conveniently pressed down from above—a proceeding necessary to allow the examining finger to penetrate deeply.

Intermediate tactual examination of the uterus is of various kinds. The lateral posture is best for simple, uncombined examination of the uterus through the rectum or vaginal vault, and dorsal recumbency is the most suitable in combined or bi-manual examinations.

(β.) *Visual Examinations.*—The vaginal portion and

cavity of the uterus are the only parts of the organ capable of being brought into view. Diseases of the vaginal portions are so common, and examinations of it so frequently required, that the best method of carrying them out becomes a question of much moment. As a rule, it is the os uteri which is generally wished to be seen; it is often no easy task to accomplish this, and many fail altogether in effecting it from want of bearing in mind the relative axes and position of the organs. They either fail to remember that the axis of the vagina is not in a line with that of the body, or the axis of the uterus in a line with that of the vagina; or they neglect to find out by tactual examination, before passing the speculum, whether the uterus rests in a normal or abnormal direction. Examining a patient on her side with the cylindrical speculum is nearly always unsatisfactory. The axis of the vagina causes the mouth of the instrument to be tilted forward, and in this situation the legs of the patient impede the light, and get in the way of the head and arms of the examiner. If he attempts to rectify this by drawing the mouth of the speculum backwards, its distal end immediately slips forward, away from the os uteri, which normally lies in the direction of the sacrum. In uterine retrorsion the lateral posture may answer very well; but in all ordinary cases the os and cervix uteri can be best brought into view when the patient is semi-prone, or lies on her back.

(γ.) *Mensural Examinations.*—In measuring the cavity of the uterus by means of a sound, the patient should lie on her side. The axis of the uterus being from before downward and backward, the handle of the sound after its introduction passes in the direction of the anus. When a patient lies on her back during the use of the sound, the surface upon which she rests comes in the way of the operator, and prevents the necessary depression of the handle. In retrorsion, these conditions are reversed, and the instrument may be most conveniently used while the patient is on her back.

Gynecometrical examinations of the uterus by means of sounds placed simultaneously into adjacent cavities or externally may, in most cases, be carried out satisfactorily

whilst the patient is recumbent on her side, but it may be occasionally necessary to use other postures.

(b.) *Operations.*—In all operations upon the uterus through the vagina, the patient must be placed in the dorsal recumbent or semi-prone posture, the former being, generally speaking, the most convenient. When the uterus is operated upon through an opening in the abdominal wall, the woman must of course lie upon her back.

In making applications to the os and cervix uteri, the dorsal recumbent posture has great advantage, for when the patient is so placed, the axis of the vagina lies from before downward and backward, and consequently when fluids are used they do not run out of the mouth of the speculum, but gravitate towards the surfaces to which they are intended to be applied. They are thus prevented from staining and destroying the patient's linen, and remain in safety until absorbed by cotton-wool. If it is intended to reap these advantages in a semi-prone posture, it will be found necessary to raise the patient's hips and lower her shoulders.

The rules as to posture, which have been mentioned as necessary to be observed when syringing the vagina, apply with equal force when injecting the uterine cavity, and should be carefully borne in mind.

### 7. *The Ovaries.*

(a.) *Examinations.*—The ovaries, when normal, being so small and mobile, their examination by touch is always difficult; they may, however, sometimes be felt through the roof of the vagina when prolapsed, or by the combined vaginal or rectal and abdominal method when the patient lies on her back with the shoulders raised. They may also be felt, when the woman is thin and in the recumbent position, by pressing deeply down in their region through the abdominal walls. When an ovary becomes enlarged by disease, the difficulty of detecting and examining it ceases. By careful manipulations a fair estimate of its size and position can now be easily obtained. If an ovary be only moderately enlarged, it is a good plan to turn the patient on the side of the affected organ, with her shoulders a little raised, for if

she be allowed to lie on the opposite side the ovary will gravitate behind the uterus, and assume a position much more difficult for examination. In the diagnosis of large ovarian tumours, posture is of the greatest service, and more particularly in differentiating between ascites and ovarian dropsy. In the former, the fluid can gravitate to any part of the abdominal cavity; in the latter, its movement is limited by the containing cyst. When a patient suffering from ascites lies upon her back, the fluid gravitates to the posterior part of the abdominal cavity, and the intestines, with their gaseous contents float, producing areas of resonance and dulness, as in figure 7. In the same posture a patient with ovarian dropsy would present areas as in figure 8. If a woman suffering from ascites stands or sits erect, the ascitic fluid falls to the pelvic cavity and lower part of the abdomen, and the areas of resonance and dulness

FIG. 7.

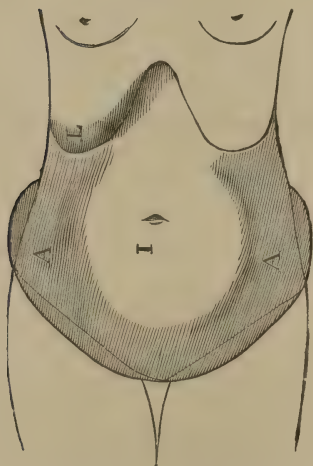
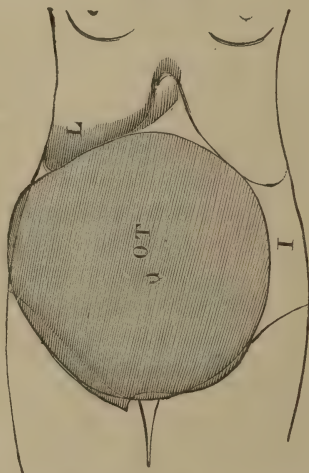
Resonant and dull areas in ascites  
(*Barnes*).

FIG. 8.

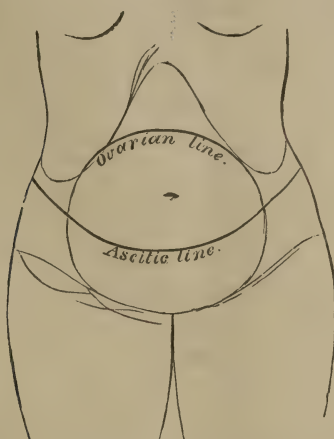
Resonant and dull areas in ovarian  
dropsy (*Barnes*).

under percussion are again changed, as in figure 9. With every change of a patient's posture, the ascitic fluid moves, and with this movement the area of fluctuation shifts. It is scarcely necessary to add, that this is not the case in ovarian



dropsy. In diagnosing which ovary is affected, the patient should lie upon her back, when it will be found that there is

FIG. 9.



Resonant and dull areas when the patient sits or stands (*Barnes*).

less resonance on the affected side, owing to the intestines being dislodged by the enlarged ovary.

(b.) *Operations.*—In tapping ovarian cysts through the abdominal walls, the patient may be placed in a dorsal reclining or lateral recumbent posture. If, however, the operation be performed through the vagina or rectum, the lateral position is not suitable; for, so placed, vaginal aspiration may occur, and air be sucked into the cyst through the tube. In ovariectomy, although the lateral and half-sitting postures have been proposed and used, most operators place their patients in the dorsal recumbent position. Unfortunately, any posture which favours the flow of blood, or cystic fluid, from the abdominal cavity, also causes the intestines to escape through the wound. It is sometimes difficult, even in the recumbent posture, to prevent this annoying complication. Where drainage is desirable after ovariectomy, the influence of gravitation upon the offending fluid may often be remembered with advantage.

8. *The Rectum.*

All examinations and operations upon the rectum are best performed when the patient is semi-prone, or upon her side, with the knees well drawn up. Injections into the rectum are facilitated by the hips being raised higher than the shoulders.

*(To be continued.)*

## ON THE MECHANISM OF LABOUR.

By W. STEPHENSON, M.D., F.R.C.S.E.

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*(Continued from p. 593.)*

HAVING thrown aside the lever principle in the elucidation of the mechanism of labour as inappropriate and antiquated, it is necessary to state what are the mechanical principles which should be employed. Having seen also that for a full and accurate conception of the movement of the head it is necessary to take cognisance of other motions than those represented by the curved path through which the head travels, it is apparent that the principles must be such as are applied to elucidate the movements of a rigid body acted upon by various forces. I quote the following from Deschanel's "Natural Philosophy :—"

"When a body moves so that all its points are, at every instant, travelling in the same direction (that is in parallel directions and towards the same parts), and with equal velocities, it is said to have a movement of translation. All straight lines in a body so moving remain always parallel to their original positions, and conversely; hence this property may be taken as a definition of the movement of translation. Every possible motion of a rigid body can be resolved into motion of translation, accompanied by motion of rotation. . . . It is always possible, and is generally convenient, to regard the motion of a rigid body, under the action of any forces, as compounded of a motion of translation of the body as a whole, and a rotation of the body about an axis passing

\* Translated by Prof. Everet, Part I.

through its centre of mass" (pp. 73-74). "Two equal and parallel forces acting in opposite directions are called a *couple*. It cannot be equilibrated or replaced by a single force, but obviously tends to produce a motion of rotation. We may assume that the translation has been produced by a force, and the rotation by a couple; this latter then presents itself as a sort of natural element in mechanics" (p. 16).

It is this element of a couple which should displace the lever in all obstetric problems. "The perpendicular distance between the lines of action of the two equal forces which constitute a couple is called the *arm* of the couple. The product of one of the two equal forces by the arm is called the *moment* of the couple, and is the measure of the power of the couple to produce rotation. It is proved in treatises on mechanics that two couples, acting on a body and tending to turn it in opposite directions, will equilibrate each other, if their moments are equal, even though they be applied at different parts of the body. Two or more couples acting on a body and tending to turn it in the same direction may be replaced by a single couple whose moment is the sum of their moments; and any number of couples acting on a body and tending to turn it in any directions whatever, are always, except when they are in equilibrium, equivalent to a single couple" (p. 16).

Applying so much to the subject on hand, we see that the parturient forces should not be resolved, as is generally the case, into a single resultant, but into a resultant and a couple. *In no part of its progress through the pelvis does the movement of the head partake of the nature of a simple translation, but there is always combined with it a motion of rotation.* In the latter portion of its progress this is evident enough, when forward occipital rotation and revolving round the pubis occur. But it is equally true in the first portion, when the head meets only with the resistance of the soft parts. By them rotation on a transverse axis is produced whereby the occiput or the forehead descends first. Whether the one or the other motion will take place is not dependent upon the *amount* of resistance offered by the soft parts. That has "justly been assumed to be equal" all round. But the motion

in one direction or the other is determined by the *moment* of the force—that is, its power to produce rotation. The moment of the force is dependent upon its direction. This, then, opens up the question, How are we to determine the direction of the various pressures to which the head is subjected? Previous writers talk vaguely of the force of resistance acting in an upward direction whilst the uterine force acts downwards. This is not, however, sufficiently accurate to apply to the mechanical problems involved. And, if we assume that the forces are parallel and in opposite directions, we again take for granted what is not strictly true. For the resultant of the pressures from the soft parts, which act on the back portion of the head, is always inclined at an angle to the resultant of the forces acting on the fore-part. These resultants, if prolonged, will meet in a point, and the moment of each will depend upon the direction of the uterine resultant. These three resultants can be resolved into a couple which will indicate the direction of the rotation. This point, however, cannot be well discussed without being illustrated with figures. I therefore postpone it until I examine the movements of the descent of the head through the first part of the pelvis.

We have not, however, yet reached the full conception of the movements of the head. To complete it we must remember that the contractions of the uterus are not constant, but intermittent, and that the movements are not continuous. If there were a continuous pressure, however great, kept up on the head, it could never be born. Another proposition is necessary to complete our idea. *With each contraction of the uterus the head passes from one state of equilibrium to another, and then recedes, but does not resume its initial position.* In passing from its initial to its second state of equilibrium—that which it assumes at the end of a pain—it undergoes a movement of rotation. Any given diameter, say the antero-posterior, in the second position, is not parallel to that which it occupied in the first, but inclined to it at an angle. When the head recedes, it does not always resume its original position, but retains more or less its degree of rotation. During the next pain the head again undergoes a degree of rotation, and the diameter is now



placed at a still greater angle from its original position—and so on, until another couple acquires a greater moment, so as to produce rotation in another direction. This movement I would designate the *escapement movement* of the head. It resembles closely the “escapement” of a watch; it also explains the method whereby the head effects its escape, and is, therefore, very applicable.

It should be specially noted that in this movement the recession of the head is an *essential factor* in its production, a point of considerable interest.

By this movement is explained the manner by which, when a diameter of the head is presented to a strait in the pelvis too narrow for it to pass through, is accomplished the rotation whereby a smaller diameter is presented. We see this movement taking place when the head has reached the floor of the pelvis with the forehead leading. In this position occipital rotation cannot take place, but under the intermitting action of the uterus the forehead is found to recede and the occiput to descend.

In this case the action is slightly different from that described. It is more accurate to say that in the descent of the head the forehead is arrested, whilst yet the occiput is free to move. The rotation movement previous to the arrest of the forehead may have been in the opposite direction, but so soon as the forehead is fixed the proper rotation occurs.

This brings us to a statement of other general principles which must be borne in mind, and which explain some important points in the mechanism of labour. The head must be regarded as an ovoid-shaped body, free to move to a certain extent in any direction. It is constrained to move in the direction of the developed parturient canal. But in so moving it may rotate or revolve around any of its axes. If in its passage the head is arrested at one point only, there remains freedom of motion in two directions. Say the point is in the forehead, the head may then rotate so as to produce chin-flexion; or it may turn on the point, and the occiput rotate forward. Both these motions may be combined and the occiput move downwards and forwards in a curved path. If the head is arrested at two points, there is then freedom

to move only by rotation around the axis lying between the two points. This movement is seen in its simplest form when the head is arrested in a contracted conjugate. It rotates upon the axis lying between the pubis and promontory, the forehead or the occiput descending.

If the head becomes fixed in three points not lying in a straight line, then there is equilibrium, and progress is arrested for the time.\*

To take the last illustration, the head revolves on the axis engaged in the narrowed conjugate until a third point is fixed at the side of the pelvis. But even now the progress of the head is not stopped. The escapement movement comes into play. The arrestment at the three points is not simultaneous, but a movement of rotation has occurred before equilibrium is reached. The head recedes and again advances, a slight increase of rotation again occurs, and this is repeated until a diameter is presented small enough to pass.

During this process a certain moulding of the head occurs, but it is wrong to assume that the escape is due solely to the moulding. It has its effect; but more important is the movement of rotation, although many writers have entirely overlooked it, and refer only to the process of moulding.

Returning again to the position of the head on the floor of the pelvis with the forehead leading, where advance can only be made by the recession of the forehead; the movement is accomplished by this part being first arrested, whilst the occiput continues to move slightly downwards. It, too, is soon fixed, and further progress would be stayed were it not that the head recedes. Whilst receding, however, the slight rotatory motion is not wholly undone. Again the head is driven onward, the forehead is again first fixed, but at a part nearer the vertex, and the occiput descends a little lower, the head is again slightly rotated, and so on. However slight the amount of rotation with each pain, yet, by the continuance of this escapement movement, the occiput finally reaches a lower level, and the onward progress is renewed.

This, and other movements of the head, may be studied

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\* *Vide* "Elements of Natural Philosophy." By Thomson and Tait. Part I. § 167.

by cutting out in stiff cardboard a sagittal section of the foetal head. Lay this on a table in proper position. With the left hand resting on the table, *on the finger-tips*, you can form a section of the pelvis. The thumb represents the pubis, the forefinger the promontory, and the other fingers naturally arrange themselves in the curve of the sacrum. With the right hand you apply the uterine force to the head, intermittingly, and always withdrawing the head slightly, care being taken to direct the force in the axis of the brim. To witness the escapement movement it is sufficient to try to pass the head through a space between the finger and thumb somewhat less than the antero-posterior diameter of the head. To pass through, a rotation is necessary, and to accomplish this one point must come to rest before another. If the forehead is arrested first, rotation will, by successive movements, permit the occiput to escape first. If the occiput is brought to rest before the forehead, then rotation will be in the direction to cause the forehead to descend.

By studying this movement, in this manner, it will be seen that under the successive contractions of the uterus the head may be made to rotate gradually on an axis, without any actual onward movement, so that either the occiput or the face may come to present. We derive therefrom a glimmering of light on the mode of production of face presentations, but we are not yet in a position fully to enter on this question.

Before passing from this part of the subject let us throw an additional interest into it, by glancing at some of its practical bearings. As we have seen, a class of cases where the escapement movement plays an important part, is in contraction of the brim. The mechanism of this class has been well described—how the head rotates so as to cause either an unusual degree of chin-flexion, or the chin is extended. But in the application of the forceps in these cases, the natural mechanism has been overlooked. The subject has been treated too much under the idea that the movement of the head was one of translation only. The arguments in the discussion of Turning *versus* Forceps are entirely based on this conception. The views of Dr. Barnes, on the other hand, in describing the movement of rounding the pro-

montory, and the pendulum action, are not quite accurate. They are an advance upon the former position, but require modification and correction. The effect of moulding, as I before observed, has obtained undue prominence, to the neglect of the movement of rotation.

In the other position before referred to, where the escapement movement comes into play, much difference of opinion has arisen as to our power of aiding the natural movement from a want of accurate knowledge of how the action is accomplished. Some writers have questioned our power, because on application of pressure they have been unable at once to produce the desired effect, and believe that when the movement has finally occurred, under a continuance of their efforts, it has been as much by the natural effects of nature as from their assistance. It must, however, be remembered that the movement is always a gradual one, and that it occurs by the accumulation of slight effects towards rotation. We cannot expect, therefore, at once to push up the forehead and find the occiput descend with the next pain; nor is there any reason to suppose that by carefully directed pressure we cannot aid in the production of the movement. Our aid, however, is not to be extended solely during a pain, but first, in the interval, to push the forehead up as high as possible, then, retaining our pressure when the uterus contracts, to endeavour to keep it as high up as possible, and in this way to produce as much descent of the occiput as the space will permit of.

Another non-instrumental aid to labour may be deduced from a study of the escapement movement. We have seen that, to complete the necessary rotation, the recession of the head during the interval is an essential factor. Frequently in labour it is found that the backward movement is imperfectly performed, or that the head remains in the state of equilibrium it had attained during the pain. When such is the case, and arrest of the onward movement results, we may facilitate the mechanism by pushing the head upwards during an interval, a method which I have frequently observed to be of decided advantage.

From the conception which we have now formed of the



movements of the head, it is also evident, that, in the use of the forceps, we should have regard to something more than directing our traction solely in the direction of the axis of the parturient canal, or the combination therewith of a haphazard pendulum action. The traction must be combined with such a movement of the handles that will cause the blades to act on the head as a couple, producing the necessary rotation, which will cause descent of one or other end of the long diameter. The selection of the direction must depend upon an accurate diagnosis of the whole situation and our knowledge of the mechanism proper to the state of affairs; a consideration which shows how highly important it is that every medical practitioner should possess a thorough knowledge of the scientific aspects of obstetrics.

*(To be continued.)*

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## ON THE MANAGEMENT OF THE NIPPLES.

By SAMUEL SLOAN, M.D.

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THE management of the nipples, though not a subject which has in view directly the preservation of human life, is yet one demanding the attention of every thoughtful and judicious practitioner; for, does it not involve the health and comfort of the gentler, and, in the present state of society, the more sensitive to pain of the human race; the careful thought for and kindly treatment of whom by their sterner brothers may make the latter less amenable to the accusation, so often made in our day, that they are incapable of ministering to the wants of the other sex? And how often is the practitioner's anxiety aroused by this, as some would think, small matter; for it not only involves the safe recovery of his patient, but also, it may be, his own reputation; since few of us engaged in midwifery practice can fail to have observed that it is frequently not our skill, in difficult obstetric operations, that secures for us the confidence of our patients, but rather the success with which we manage to guide our case on to complete convalescence without a single hitch.

In considering the anatomical structure of the nipples, it will be necessary to study also the structure of the gland to which they may be said to act as excretory ducts. "The position of the mammary glands is interesting; though uterine appendages, they are not, as in some mammalia, in close proximity to the ovarian apparatus; but, as if showing that the instincts should be subjugated to the control of the reason, and the helplessness of the infant made the means of moral training to the mother, they are, in the human species, brought towards the anterior, the nobler portion of the body."

Following the arrangement of Sir Astley Cooper, and adopting his description to some extent, I shall consider the individual parts of the mamma from without inwards. The nipple is not placed in the centre of the breast, but near the abdominal region of the gland. It projects forwards and outwards, with a slight turn upwards, and is thus adapted to the position of the mouth of the infant as it lies in its mother's arms. In the virgin it is a rounded cone, and nearly smooth until puberty; but in the lactating woman its extremity is flat and cribriform, on account of the openings of the lactiferous tubes. At sixteen years this surface is slightly wrinkled; at seventeen it is covered with small papillæ, whilst from twenty till forty these papillæ are large. This alteration of the surface broadens the nipple, and renders the adhesion of the child's mouth firm and more complete. The substance of the nipple consists of the common integuments—fascia, milk-tubes, blood-vessels, nerves, lymphatics, elastic tissue, bundles of muscular fibres, and connecting cellular membrane. The cuticle is here extremely delicate, and enters with the rete mucosum into the lactiferous tubes. The cutis forms a considerable portion of the nipple; it is composed of a great number of papillæ, which produce a vascular and sentient surface. The direction of these papillæ is from the base towards the apex of the nipple, so that they are pushed back as the nipple enters the mouth of the child, the papillæ of which are directed from within outwards, and thus greater excitement is produced. These papillæ form, in their arrangement on the nipple, broken portions of circles, and

are numerous and large for the size of the part ; they are also very vascular and sensitive. According to Cazeaux, in the bottom of the creases separating them, are the orifices of great numbers of sebaceous glands. Through the substance of the nipple, from base to apex, pass the lactiferous tubes—fifteen to twenty in number—in a straight course, terminating in very minute apertures, considerably narrower than the ducts themselves. The nipple is carefully connected with the gland by means of a firm fascia encircling the lacteal tubes, derived from the general fibrous tissue of the breast. Of the *areola*, it may suffice to say that its whole structure points to it as a continuation of the nipple ; its papillæ are smallest at the circumference, but gradually increase in size as they approach the nipple. It is also provided with muscular fibres, disposed around the nipple in close concentric circles, which become more widely separated towards the edge of the areola, where they finally disappear. The skin-muscle thus formed, compresses the nipple when it contracts ; under its action also the skin of the areola contracts and wrinkles when the nipple is tickled. Beneath the skin of the areola the lacteal ducts form dilatations, or reservoirs. These are more abundant at the lower portion of this part of the breast ; the importance of which will be obvious when we study the position of the child in its mother's arms and at the breast. Its cheek is then pressing on, and therefore pressing out the milk from this engorged portion of the areola ; whilst its nose, through which alone it can then breathe, is free from pressure, on account of the less engorged condition of the upper part of the areola.

We have now only to review briefly the structure of the mamma proper. A racemose gland, like the parotid and the pancreas, it is composed of fifteen to twenty or more lobes, according to the number of the orifices of the lactiferous ducts at the apex of the nipple. Each lobe is composed of a certain number of smaller and smallest lobules ; and these, lastly, of gland vesicles. The size of these vesicles in full lactation is, according to Sir Astley Cooper, that of a hole pricked in paper by the point of a very fine pin.

The smallest lobules consist of a cluster of rounded vesicles, which open into the smallest branches of the lacteal ducts ; these ducts uniting, form larger ducts, which terminate in a single canal—the lacteal tube of that particular lobe—which, when it reaches the areolar portion of the mamma is dilated, to be again contracted at the base of the nipple, as we saw before. These lobes of the breast are separated from each other by a fibrous envelope, and surrounded by fatty tissue. It may also be remarked that “the margins of the breast do not form a regular disc, but the secreting structure often projects into the surrounding fibrous and adipose tissue, so as to produce radii from the nipple, of very unequal lengths.”

Before leaving the anatomical part of our subject let us consider the abnormal condition in which we sometimes find the nipple. Retracted nipples may be simply normal nipples drawn in afterwards, as by old cicatricial bands, or pressed in, as by a tight dress. But, probably more frequently, retracted nipples are the rudimentary state of the nipple remaining persistent throughout life. An interesting case of perfectly developed breasts with imperfectly developed areolæ and nipples—the latter being retracted and as small as a child's—is related by Dr. Matthews Duncan in the first volume of the *OBSTETRICAL JOURNAL*.

In the virgin state the colour of the nipple and areola differs comparatively little from the surrounding skin. According to Dr. Montgomery, the first alteration perceptible is “a soft and moist state of the integument ; this state appears to be caused by infiltration of the subjacent cellular tissue, which, together with its altered colour, gives us the idea of a part in which there is going forward a greater degree of vital action than is in operation around it ; and we not unfrequently find that the little glandular follicles, or tubercles, are bedewed with a secretion sufficient to damp and colour the woman's inner dress. This change generally takes place about the ninth week of pregnancy, and the result is a considerable increase in the size of the nipple. During the progress of the next two months the changes in the areola are in general complete or nearly so, and then it presents



the following characters :—A circle round the nipple, whose colour varies in intensity according to the complexion of the individual. In the centre of the coloured circle the nipple is observed partaking of the altered colour of the part, and appearing turgid and prominent, while the surface of the areola, especially that part of it which lies more immediately around the base of the nipple, is studded over and rendered unequal by the prominence of the glandular follicles, which, varying in number from twelve to twenty, project from 1-16th to 1-8th of an inch." These follicles are possessed of excretory ducts. With respect to the contents of the lacteal ducts before parturition I quote from Kölliker as follows :— "It is remarked that, except at the periods of lactation and pregnancy, the glands contain nothing but a small quantity of yellowish viscid mucus, with a certain number of epithelial cells, and are lined up to their extremities by an epithelium. With conception this state of things is altered. The cells of the gland-vesicles begin to develop, at first a little, and subsequently more and more fatty matter within them, and to enlarge so as to entirely fill the terminal vesicles. To this is added, before the end of pregnancy, a new formation of fat-containing cells in them, by which the older cells are forced into the lactiferous ducts, which they gradually fill. Thus it happens that, though a true secretion is not at that time set up, still in the latter half of pregnancy a few drops of fluid may be expressed from the gland, which, as shown by its yellow colour, is not milk ; but nevertheless contains a certain number of fat globules from the more or less disintegrated fatty cells, exactly resembling the subsequent milk globules, and also contains such cells either with or without a tunic—the so-called colostrum corpuscles. On the commencement of lactation after parturition, the cell-formation in the gland-vesicles proceeds with excessive energy, in consequence of which the secretion collected in the lactiferous ducts and gland-vesicles is evacuated, as the colostrum or immature milk ; the true milk taking its place."

Thus we find that, immediately after parturition, the nipple is, as compared with the virgin condition, projecting, turgid, sensitive, and with its lactiferous ducts filled with

colostrum. The child, as a rule, is applied to the nipple at an interval of from six to twelve hours after birth. It grasps the nipple and part of the areola in its mouth, and there results, during the act of sucking, compression of the nipple by the child's gums, friction with its tongue and suction by the anterior part of its mouth ; the last resembling the operation of cupping ; and, besides extracting the fluid contents of the ducts, acting also on the vessels of the nipples, producing engorgement. As soon as the secretion of milk has taken place the breast and nipple become distended, heated, and increased in sensibility ; and, though now the milk will be more easily withdrawn by the child, the nipple is at the same time in a less protected condition. These results will, of course, be all exaggerated if the nipple is retracted ; as then more forcible suction will be requisite to draw out the nipple ; whilst, in some instances, this difficulty may be insuperable.

This brings us to consider the affections to which the nipples, from the foregoing considerations, will be liable. Probably the first suction of a strong child on an average nipple removes all its sebaceous matter, opens up the orifices of the lactiferous ducts, by withdrawing the plugs of hardened colostrum which may have obstructed them, thins the epidermis by solution, and produces to some extent at least extravasation of blood under the cuticle. Of course the extent of these results will also materially depend on the length of time the child remains at the nipple. When the child relaxes its hold of the nipple after the milk has appeared, were we then to examine the organ we would find it covered with milk mixed with the acid saliva from the child's mouth, and with but little, if any, of the natural unctuous matter on it. In this condition let the nipple be exposed to the cold air and the result will be a drying of the part, which will then become hard and irritable, with probably some exudation from the parts in which the epidermis has been partially *eroded*. Repeated sucking will exaggerate this, by removing the scabs ; and we have then *excoriated* nipples. From this results partial destruction of the cutis, causing *ulceration* of the nipple. *Fissure* is an elongated ulceration, generally

deeper than the simple excoriation. It forms at the bottom of the furrows and takes their direction ; sometimes, and then most painful, it occupies the grooves separating the base of the nipple from the rest of the skin. *Cracks* are an exaggeration of fissures ; they differ from the latter by the cracked, swollen, and extremely sensitive condition of the surrounding skin. The reason that these conditions most frequently affect the apex of the nipple, is explained by M. Deluze to be the reception of the nipple in the gutter formed by the tongue and soft palate of the child ; the efforts of suction thus telling on the tip of the nipple, which is then unsupported, and the epidermis of which gives way. Fissures and cracks may also be produced mechanically by violent tractions on the nipple during sucking. It will readily be imagined that so vascular an organ as the nipple will readily bleed during sucking, should it be in any of the conditions previously noticed, and thus an explanation will be found for what would otherwise probably excite alarm :—viz., blood in the vomit or stool of the infant. Of the pain generally attending these fissures and cracks, M. Cazeaux remarks as follows :—“When we remember the painful sensations resulting from the cracks that sometimes form on the median line of the lower lip in winter, we may imagine the effect of those on the nipple, torn as they are at each renewed attempt at sucking. The suffering is sometimes so intolerable that these unfortunates are observed to bite their clothes or coverings to avoid crying out ; whilst others writhe, or are even affected with convulsive movements.” Nor need these affections end here ; for besides the almost complete separation of the nipple, which may sometimes be connected to the breast by its lactiferous tubes only, we have a whole train of mammary symptoms. And so much does the nipple, when diseased, influence the breast proper, that Dr. Churchill “believes this to be one of the most frequent causes of abscess ;” this result arising sometimes from the passage of the inflammation from the nipple along the lymphatics ; at other times from obstruction of one or more of the orifices of the lacteal ducts ; or again from the continuation of the inflammation to the tissue of

the areola, and thence to the breasts. The situation and character, therefore, of the mammary abscess will depend on the condition of the nipple which produces it.

Let us consider now the treatment of the more common affections of the nipples. And here we are met by no paucity of so-called remedies ; for I question if any disease has so many specifics, each individual practitioner having his favourite ointment or lotion as a cure of tender nipples. Nor are we at the present date much further advanced in this matter than were the contemporaries of the American, Meig. Writing about thirty years ago, he says :—

“ There can be no surer proof of the difficulty of curing any disorder than that drawn from the vast variety of remedies for it. It is well known that the remedy for intermittent fever is the Peruvian bark, or its preparations—everybody is agreed on that point : so also mercury is a proper remedy for lues, which few persons doubt. But, as to sore nipples, the whole world seems to have been ransacked for *cures*, and in a thousand lying-in rooms we shall find a thousand different *cures*, which, after all, are not capable of curing the malady. For my own part, I do not believe in the cucumber ointment so praised by Velpeau, nor the unguentum populeum, nor the lead water, nor the castor oil, nor the borax and brandy of Sir Astley, nor the infusion of green tea, nor the slippery elm bark. I make it a point to examine the sore nipple for myself.” So far so good ; but, having examined the nipples, we find that his treatment afterwards, though begun on good general principles, consists mainly in *another* ointment, which, as he puts it, “ causes the cure to be soon effected ;” and that the essential ingredients of *his* ointment are deer’s suet and scraped pippins, for the preparation of which he is careful to give minute instructions.

Perhaps the most satisfactory account of tender nipples and their treatment will be found in Dr. Fordyce Barker’s work on puerperal diseases. After enumerating the varieties of sore nipples, he insists that the nature of each particular case be ascertained before a course of treatment is determined upon. His treatment may be summed up thus :—In the early stage, when the nipple is simply sensitive and tender,



nothing is more likely to prevent ulceration than the formula recommended by Prof. Wilson of Glasgow:—Plumbi Nit. gr. x—xx; glycerin.  $\mathfrak{z}$ i. M. In the early stage of erosion use comp. tinct. of benzoin, 3 or 4 coats, with nipple-shields if possible. If ulceration, stop nursing from that nipple, empty the breasts by gentle rubbing only, paint over ulcerated surfaces with nitrate of silver gr. x to  $\mathfrak{z}$ i. water, and dust with dry powder. To cure fissure or crack, pencil with nitrate of silver, and then cover with collodion; if uncomplicated they will be easily healed. Should there be inflammation of the nipples, which is sometimes the cause and sometimes the consequence of excoriation, first use a soft bread-and-milk poultice and then lead and opium lotion. After the inflammation is so much subdued that nursing can be borne, apply a lotion of the glycerine of tannic acid.

Dr. Tilbury Fox says:—First, great cleanliness and care to remove all the milk after each time the child comes from the breast, and if the nipples are tender and excoriated use the following:—Liq. plumb., prepared calamine, glycerine, and lard, with lead nipple-shields to exclude the air and protect the parts.

Mr. Birkett's treatment may be summed up in "frequent ablutions with warm water, avoiding irritating lotions and ointments, and using glycerine, almond oil, and dry powders."

M. Cazeaux writes:—"Unfortunately the curative means hitherto employed leave much to be desired. They are, however, numerous, and I know of no disease against which so many ointments, solutions, &c., have been recommended; but here, as is always the case in therapeutics, abundance means dearth; there is much less searching when an infallible remedy is at hand." And then he proceeds to enumerate the means adopted by different writers. For example:—Trousseau advises, for excoriations or fissures, to try, first, lotions of warm water, followed by a weak solution of nitrate of silver; if not sufficient, solution of sulphate of copper or zinc; and finally, if persistent, white precipitate (precipitated calomel) ointment. M. Dubois tried without advantage oil of cocoa, nitrate of silver, collodion, and creosote. The first

acts, like other fats, by protecting from the air ; the collodion became detached ; creosote was painful, and the smell repugnant to the child.

Cazeaux believes that cauterisation may give rise to phlegmonous inflammation of the breast ; and that, if nursing be resumed too soon, the ulcers are torn up again. Mr. Startin, a London physician, extols glycerine ; it absorbs moisture from the air. The following are his formulæ for excoriations and fissures :—Gum tragacanth pure,  $\mathfrak{z}\text{ij}$  to  $\mathfrak{z}\text{iv}$  ; lime-water,  $\mathfrak{z}\text{iv}$  ; rose-water,  $\mathfrak{z}\text{ij}$  ; purified glycerine,  $\mathfrak{z}\text{j}$ . M. A soft jelly. To be used as an ointment or embrocation. Against fissure of the nipple :  $\mathfrak{R}$  Sodæ biborat,  $\mathfrak{z}\text{ss}$  to  $\mathfrak{z}\text{j}$  ; purified glycerine,  $\mathfrak{z}\text{ss}$  ; distilled rose-water,  $\mathfrak{z}\text{viiss}$ . M. S. Use as a lotion. And then, as if one remedy were as good as another, and giving no indication of what particular remedy is *his* favourite, M. Cazeaux adds “all these measures may be greatly assisted by the use of artificial nipples.”

Schroeder advises spirits of wine, or, if very tender, weak solution of tannin ; and if the nipple is small, the use of the breast-pump, before putting the child to the breast. If deep chaps, and the child cannot be weaned, he advises to cauterise the base, and dress with a few threads of charpie soaked in solution of tannin, one to thirty or fifty.

Prof. Leishman thinks there is nothing better in excoriation than strong infusion of tea. Should this fail he would try some of the endless variety of similar medicaments, avoiding such as may be prejudicial to the child, as lead. If obstinate, the following, he thinks, is admirable :—Acid tannic, gr.  $\text{ii}\mathfrak{j}$  ; glycerine,  $\mathfrak{z}\text{ss}$  ; ung. cetacei, ad  $\mathfrak{z}\text{j}$ . M. Should there be fissure, the above should be introduced into it by means of scraped lint. A nipple-shield he also advises to protect from the dress ; and the artificial nipple if much pain in sucking. In some obstinate cases, he says, the child must be weaned.

Dr. Churchill would use a weak solution of nitrate of silver applied after each time of sucking. Mr. Druitt recommends gr. v tannin in  $\mathfrak{z}\text{j}$  water. Dr. Johnston uses the following :—Borax, chalk, spirits of wine, and water ; alternating this with ointment made of white wax, almond oil, honey,

and balsam of Peru. Sir James Simpson, in cases of fissure, drew the edges together, and sealed with solution of gun-cotton; succeeding so that sucking did not open them. Others have been less successful with this plan.

M. Legroux advises gold-beater's skin, fastened at its circumference by elastic collodion, and pierced at the extremity of the nipple.

And if it were worth our while we might search the works of every other writer on the subject of the nipples; and we would find him, probably, condemning the remedies of others and lauding some fancied specific of his own. And perhaps, in one sense, this is not an undesirable state of matters; for, with general principles always in view, that remedy in which the practitioner has most faith is likely to have the best chance; in this case, as in others, "the best administered being the best."

My own plan, when the nipples have unfortunately become tender, is to carefully wash off the milk, after the child quits the breast, with tepid water; then to wash the nipple with weak spirit lotion and glycerine to prevent drying; or, if the excoriation should be more advanced, some astringent is added, as tannin or a weak solution of nitrate of silver. To protect the nipples from friction against the dress, *if the part be not inflamed*, I order a properly constructed nipple-shield, and occasionally apply a mild ointment, as oxide of zinc, to protect the skin from the repeated application of the watery solutions. If the nipple be retracted, or in any way difficult for the infant to seize, I advise that it be gently drawn out by the breast-pump, of which the best is the green ball breast-exhauster; and, if still painful when the child is applied to the nipple, an artificial glass nipple with india-rubber teat must be *at once* applied. Of this latter apparatus I would add that it is of the utmost importance to secure one of a proper shape; as, if too narrow, constriction of the nipple takes place, causing occlusion of the lactiferous ducts; and, if too long, so much of a vacuum is produced between the extremity of the nipple and the mouth of the child that it is generally impossible for the child to draw the milk into the teat. The teat also ought not to be long, as it then only

serves to tickle the fauces of the child. It is thus an important matter, in ordering one of Maw's glass nipple-shields, to secure a proper fit for the particular case ; as it is advisable that the child's temper should not be tried in vain attempts to extract the milk. Besides this the teat ought to be carefully cleansed from the composition which covers and impregnates it, as the smell and taste of this material may disgust the child so much that it may refuse to make another attempt. This unsavoury material may be removed by soaking the teat in whisky and then washing it. Before applying the child to this artificial nipple the latter ought to be filled with some of the mother's milk ; or, if this is not practicable, with sweetened milk and water. Some children take so kindly to this artificial nipple that it is difficult, after being long accustomed to it, to persuade them to use the mother's nipple again. But, should only one nipple be affected, this will not readily happen, *especially if the artificial teat be small enough*. Of artificial nipples there is a great variety, but to me the one described above and sold by Maw seems to most efficiently protect the nipple ; though the shield and teat in one piece, made of india-rubber or other soft material, as softened ivory, will make suction easier for a weakly child, if it can be borne by the mother. There is, however, with its use considerable compression of the nipple by the child's gums. A good artificial nipple has yet to be devised. If the nipple-shield can be borne, and the child can be coaxed to use it, there will be little difficulty in curing the nipples on general principles. In the event of excoriation of the nipple continuing after this attempt with the artificial nipple, and ulceration setting in, there remains no course but to take the child at once from that breast till the part is sufficiently restored to permit of its reapplication. And here the careful use of a good breast-exhauster is important. For, should the breast become engorged whilst the nipple is tender, there is every prospect of abscess of the breast taking place. In my experience, no matter how tender the nipple may be, a careful regulation of the compression of the ball by the hand, with occasional relaxation of the nipple to prevent occlusion of the lacti-



rous tubes, will always result in the almost painless removal of the milk; though, should the breast be hard and yet no milk come, gentle friction at the periphery of the breast may be required to expel the milk from the gland proper into the lactiferous reservoirs under the areola, whence the breast-exhauster will readily withdraw it. It will now be a comparatively easy matter to heal the nipple, since the first step in treating a disease is to remove the cause; the impracticability of doing this rendering the treatment of the nipple so unsatisfactory. If there be ulceration, careful washing and drying of the nipple, and the application of the solid nitrate of silver *to the part affected only*, will generally suffice. This treatment by a "tough caustic point" is, when combined with the use of the nipple-shield, a certain cure of the fissures which occur around the base of the nipple. If the part be inflamed, sedative applications or poultices will of course be the first indication. Should the affection of the nipple arise from the aphthous condition in which we sometimes find the child's mouth, the application of borax and glycerine, or chlorate of potash dissolved in glycerine, is the proper treatment for the nipple as for the mouth. I think it wise to avoid, in the selection of remedies for the nipple, any medicine which may injure the child, if sufficient care be not taken in its removal before the next application of the child to the nipple. Perhaps it may suffice to point out, regarding some recent investigations which have been made as to the quality of the milk as a factor in the production of sore nipples, that, where one nipple only is affected, this condition of the milk can have only a very limited effect as an exciting cause.

It is pleasing to pass from the too often disappointing treatment of tender nipples to consider the possibility of having the nipples perform their natural functions without the usual morbid results. In the lower ranks, from which a Maternity Hospital generally derives its patients, tender nipples are rare, since the habits of this class of society, and the more or less exposure of the nipples, in their case, to the tonic effects of atmospheric influence, will give less sensitive, because more natural, nipples. I have made inquiry at our

hospital here, and I find that, out of every twenty women confined in it during the last two years, not more than one has suffered from sore nipples. This, it will readily be acknowledged, is a result much more favourable than we have in private practice. It has been customary to order, as a prophylactic, weak spirit and water, or other mild astringent, but I have seen no evil result from the application of stronger astringents. As an astringent, however, especially if strong, is likely to cause a hardening only, and not a toughening of the nipple, we may have this organ cracking as soon as the outer film of hardened cuticle is removed, on the first application of the child to the breast. To obviate this I am in the habit of ordering the admixture of glycerine with the astringent, and the occasional application of some fatty substance, as lard. The selection of the particular astringent is, of course, of importance; but the thoroughness with which it is applied is more so. The solution I generally order is made up thus:—A large teaspoonful of dry tea is put into a two-ounce vial, one ounce of brandy and a quarter of an ounce of glycerine (Price's) are added; and, after a few days, with occasional shaking, the solution is ready for use. For two or three months previous to parturition the nipples should be thoroughly washed every night with cold water and glycerine soap, dried, and the above solution carefully brushed over the nipple, but especially around the base and into the apex. This is left on all night, and, in the morning, the lard is rubbed well in. I have frequently used glycerine of tannic acid, but have come to regard it as not sufficiently powerful. Mr. Birkett, of Guy's Hospital, remarks:—"We believe that very slight advantage is gained by the application of medicated lotions to the nipple as prophylactics against the irritation caused by sucking, and all nostrums, applied under the impression of hardening the nipple, should be scrupulously rejected." With this sweeping statement I cannot agree; nor do I fear that the application may be too severe, or that the excessive tanning of the parts may cause morbid contraction of the orifices of the lactiferous ducts; for I have seen incontinence of milk in cases where such prophylactic treatment had been carried on

for months before parturition. During this treatment the dress ought to be loose; and, if the nipples are at all retracted, they ought to be drawn out occasionally by suction or with the fingers and thumb. A circular piece of some unirritating material, with a hole in the centre, might be used in severe cases.

When the child is born, and before I leave the house, I examine the nipples and breasts. If the latter are flaccid I would prefer not to put the child early to the nipple; and, when the milk has appeared, I advise the application of the child at intervals of not less than two hours, and to both nipples at each application, giving careful instructions against letting the nipple remain in the child's mouth after it has emptied the breast, and especially against allowing it to sleep at the breast. The nipple is to be moistened with water or saliva before applying the child to it; and, when the infant quits the breast, the nipple should be washed with a mild astringent and antiseptic solution with glycerine. The mixture I prefer is as follows:—A teaspoonful each of whisky, tincture of arnica and Price's glycerine in a wine-glassful of cold water. The nipple, as soon as the infant leaves the breast, is washed with this and partially dried, and a nipple-shield at once applied to protect the nipple from friction against the dress. One of the best nipple-shields is Wansbrough's; but, after using it for some time as it is sold, I had to discard it, on account of its keeping the nipple, in some cases, too moist, and softening the cuticle; certainly a great objection to its use. To prevent this, however, it is only necessary to pierce it *over the whole of its extent* with a large needle from within outwards; and, should the nipple be scalded from insufficient piercing the rectifying of this error will suffice of itself to remove the inconvenience. I have little experience of other nipple-shields, though they may be made from a great variety of materials, and some of them might prove more convenient than Wansbrough's, to which another objection is that, though it should fit the nipple when first applied, the heat of the breast afterwards softens it; it then becomes corrugated and flattened, and thus affords little protection to the nipple. These objections

could not apply to vulcanite nipple shields, one of which, for trial, I have had prepared for me and pierced by Mr. Joseph Hilliard. Though used, I believe, in America, I do not find that they are known to any extent in this country. In using nipple-shields it is advisable to have them suspended round the neck by a ribbon ; and care should be taken that they are frequently washed with soap and water ; and if ointments are being used with them, a strong tooth-brush will be found serviceable to cleanse out the holes. Believing as I do in the importance of protecting the nipples in any prophylactic treatment, I advise, where the expense of good nipple-shields is a consideration, the use of a small circular piece of gutta-percha tissue, also pierced. But I suspect that, in such cases, unless care be taken to keep the gutta-percha, and the part over which it is applied, clean, pustules may form which might lead to inflammation in the deeper portion of the breast. But this need not happen ; and patients have often informed me that the simple gutta-percha tissue thus applied is a considerable relief, especially when the nipples are tender. To supply the natural unctuous matter of which sucking deprives the nipple, I order the occasional application of some simple ointment, as fresh oxide of zinc ; glycerine soap and tepid water easily removing it before the child goes to the nipple.

The foregoing measures, if carefully carried out, I find, as a rule, sufficient to prevent tender nipples in cases where, from the sensitive temperament of the patient, such would probably have resulted ; and that this is the case, is, I think, borne out by the fact that, when the nurse leaves, and the prophylactic treatment of the nipples is more or less neglected, instead of being gradually left off, I have noticed in many cases that tender nipples begin, and this after an interval of four or more weeks of immunity from sore nipples.

To those who have been disappointed in the results of their treatment of sore nipples, and who have not put the prophylactic treatment to the test, I would strongly recommend a fair trial of the plan which I have briefly sketched.

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## A CASE OF PUERPERAL ECLAMPSIA.

By ARTHUR WIGLESWORTH, L.R.C.P.

I WAS requested some time since to visit Mrs. C., living over two miles from my house, who was in labour with her first child. I found her downstairs, occupied in sewing, having slight pains about every half-hour. An examination revealed the os uteri dilated about one inch in diameter; head presenting. She was cheerful and active, and looked in perfect health. I directed I should be sent for when labour became more active. This was done about twelve hours subsequently, at 1 A.M., and upon arrival the delivery had been effected about twenty minutes. I learnt she had but a few severe pains, and then the child was born, but little blood was lost. I left her doing remarkably well, having a quiet pulse, and being cheerful and contented, the only complaint being slight frontal headache, and this was not mentioned until inquiry was made. At 4 A.M. I was sent for, she having been seized with convulsions. I learnt that, shortly after I left, she began to "wander," and in about half an hour was seized with eclampsia, which convulsed her whole body, and lasted about twenty minutes. A second fit had occurred just before my arrival. I found her semi-conscious, answering questions in a "dazed" kind of way; pulse 120; face flushed; no discharge of blood had taken place. I administered hydrate of chloral ʒss. In about five minutes she was again seized with a convulsion, but this was limited to the head and neck. This, I was informed, was very different in severity to the previous ones. I gave direction that in case of a relapse another ʒss hydr. chloral was to be administered, but if not, only half that quantity every two hours; face and head to be constantly sponged with vinegar and water. She was visited again at 9 A.M., and found to be fairly conscious, and no return of the convulsions. I saw her at 11.30 A.M., perfectly coherent; recollected her confinement, but nothing since; pulse 98; tongue slightly furred, not bitten; passed water freely. When asked, says she has "pain in her forehead." Ordered ʒss pot. brom. every three hours, beef-tea and milk. She was visited at 2.30

P.M. by my nephew, having been seized with another attack almost immediately after I left her. Two more convulsions had occurred before he arrived there ; ʒss of hydr. chloral was given immediately ; brom. potass. to be given every two hours, and a mustard poultice applied to nape of neck. If any more seizures occurred, a messenger was to be sent up ; otherwise she would be visited at 8 P.M. Through some mistake no message was sent till close upon that time, when I was informed she had "been in fits" since 5 P.M. I found upon arrival that, at the hour named, the convulsions returned, and increased in severity and duration upon each fresh accession until, indeed, she seemed never to be free from convulsive movements—some of them being so severe as to shake the bed violently. She had never recovered consciousness since the attack at noon. Her condition now was that of intense coma, incessant convulsive twitchings of eyelids and rolling of eyeballs—pupils perfectly insensible to strongest light, and much dilated, eyeballs quite insensible to touch—conjunctivæ much injected—face livid and deeply congested—tongue bitten, swollen, and protruding—pulse 120 and very irregular—deep stertorous breathing with laryngeal accumulation of mucus impeding respiration. Looking at her as she lay on the bed, she seemed like a person suffering from intense cerebral congestion, if not cerebral effusion. I had not the faintest hope of her recovery. Nevertheless, I felt that her only chance lay in, if possible, preventing any further convulsions, and immediately I finished my examination I commenced a free administration of chloroform, never removing the finger from her pulse. As soon as the chloroform had been freely inhaled, the first indication of improvement was manifested by the pulse, which, in about five minutes, became not only fuller but more *regular*. The inhalation was continued in less quantities, however, for twenty-five minutes, and at that time there had been no return of the eclampsia, but the general condition, pulse excepted, remained the same. I then drew off the urine, being careful that it should not be mixed with uterine discharges, which were very thick and nearly black. I again administered chloroform, and then examined the urine, when, by heat and nitric acid, the test tube became almost solidified with albumen. Again I pro-

ceeded with the chloroform, and then had a mustard plaster (24 × 14 in.) placed on the loins and well wrapped round the sides, and which was kept applied for half an hour without any perceptible effect being produced. As respiration was considerably impeded by the flapping of the lips and the accumulation of mucus, the handle of a spoon was inserted cross-wise between the teeth and kept there, the result being a manifest advantage in both inspiration and expiration. It was now one and a half hour since the commencement of chloroform inhalation, and there had been no return of the eclampsia. At times, indeed, there seemed to be indications of an impending attack ; but a larger quantity of chloroform caused it to pass away. An enema was now given of beef-tea and brandy, a portion of which was immediately rejected with a free alvine evacuation ; the remainder being injected, was retained. At 10 P.M. there seemed to be an amelioration of the deep coma, the eyelids had ceased their constant twitching, and the eyeballs to roll about. Once or twice there was an attempt to cough, as if natural reflex movements were beginning to be excited, and nature was endeavouring to clear the larynx of the mucus which had proved so troublesome. The administration of chloroform was now made somewhat intermittent, and ice having been obtained, an ice bag was applied to the head and neck. At 11.45 a second injection was given of beef-tea and brandy, into which was put 3j hydr. chloral. This was retained entirely. The breathing now became less stertorous, and the pulse continued to be more regular. A few drops of beef-tea were carefully placed upon the parched and swollen tongue, which immediately was moved about. From 12 P.M. the stertorous breathing came only at intervals, but with it the pulse became irregular ; this was always met by the immediate administration of chloroform, and the symptoms passed away. Upon touching the conjunctiva the head was slightly moved. From this time until 1 A.M. she became much quieter, and was evidently less comatose. By careful administration a teaspoonful of beef-tea was mechanically swallowed—the pulse was 100, and nearly steady—and at times she seemed as if sleeping from the effects of a strong narcotic. At 1.15 another enema of beef-tea and

brandy was administered and retained ; ice application continued. As she now seemed to have passed from immediate danger, and had evidently improved from the condition in which I had found her, I arranged to leave (having been in close attendance nearly six hours), directing that an enema of beef-tea and brandy and 5 gr. hydr. chloral should be administered every two hours. If the stertorous breathing returned, chloroform to be again administered—if convulsions again commenced, I was to be at once sent for. She was visited the next morning (*Sunday*) at 9.30 A.M. ; was found to be still quite unconscious. Pulse 90. No return of eclampsia—enemas had all been retained. I saw her at noon—still unconscious, pulse 110, and seemed somewhat restless—face and conjunctivæ much less congested. Had passed two semi-liquid motions, uterine discharge not so dark. About 1½ pint of urine was drawn off somewhat highly coloured free coagulation with heat and nitric acid ; amount of albumen about half as much as on previous occasion. She was slightly raised, and about a wineglassful of beef-tea and brandy swallowed in small teaspoonfuls. This was ordered to be repeated every hour ; every second hour 5 gr. hydr. chloral to be added.

At 9 P.M. evidently less insensible ; muttered indistinctly when very loudly spoken to ; pulse 98, rather variable ; skin cool ; tongue cleaner, though still very much coated ; constant gaping. Had opened her eyes once when the baby had cried ; swallowed fairly well a few teaspoonfuls of brandy and beef-tea. Urine drawn off, during which she was very restless ; found to contain much less albumen.

Visited on *Monday* at 11.30 A.M.—Opened her eyes when I entered the room, and is decidedly more conscious ; taken her nourishment, freely drinking it out of a cup. Called her husband by name during the night ; very restless when urine was drawn off, which was still highly coloured, but fair in quantity, and contained but little albumen. When told puts out her tongue, but relapses again immediately to semi-consciousness ; dislikes ice bag, constantly endeavouring to move her head away. 9 P.M.—Is much better ; answers questions rationally but very slowly ; memory completely in



abeyance ; has taken nourishment freely and passed water ; breasts filling with milk ; skin cool and moist ; pulse 90 ; has a quiet satisfied look ; when asked, says she has frontal pain.

*Tuesday.*—Still doing well ; passes water freely, and bowels opened naturally ; slept well during the night after a dose of hydr. chloral ; pulse 110 ; still speaks slowly, and speech imperfectly articulated ; ordered potass. brom.  $\frac{3}{4}$  ss every three hours, and hydr. chloral if necessary. Has nursed the baby.

*Wednesday.*—Still improving ; rambles a little at times ; fancies she has had a good confinement ; complains that everything appears “ red ;” urine very slightly albuminous. From this time she steadily, though very slowly, improved ; and even at the end of two months her speech was still slow.

In reviewing the above case, I have no hesitation in concluding that it was one of true puerperal eclampsia, but nevertheless was not due to uræmia. There was no prior evidence of renal disease, no dropsy, and from first to last there was no deficiency in the discharge of urine, which was perfectly free ; and uræmic convulsions do not usually occur when the urinary discharge is ample, except in chronic uræmia. The subsequent progress of the case shows this not to have been existent. That it was “ cerebral” in its origin, I have no doubt ; and that the intense albuminuria was due to the cerebral disturbance, I think is sufficiently clear. So soon as the eclampsia and its immediate effects passed off, so did the albumen, and almost in exact ratio. Another fact worth noticing is, that in the face of the extreme coma, and the fact that there had been no consciousness for nearly eight hours, the eclampsia entirely subsided upon the administration of chloroform, which was at first freely given. Its effect in reducing the irregularity of the pulse was remarkable. At times a threatened attack could be distinctly perceived—not only by myself, but by the husband and nurse—but which subsided with a liberal administration of chloroform. I think, also, I could trace a distinct benefit from the injection of the  $\frac{3}{4}$  hydr. of chloral, which was certainly a large dose, when combined with administration of chloroform, but I was guided in this by the effects previously produced. I have but little

doubt that, had the case proceeded much further, recovery would have been precluded. Whether the original attack was due simply to deranged nerve function or not, cannot be determined, but the sudden and severe accession was doubtless due either to cerebral serous effusion or hæmorrhage. The slow articulation lasting for over two months points to a lesion of the brain. The lesson I have learnt from the case is, that—provided the convulsions are clearly not due to excessive uræmia, no matter how deep the coma, how irregular the pulse, how livid the face—a free administration of chloroform is the first step to be undertaken.

## Abstracts of Societies' Proceedings.

### OBSTETRICAL SOCIETY OF LONDON.

*Meeting, Dec. 5th, 1877.*

Dr. CHARLES WEST, *President, in the Chair.*

Dr. ROPER showed a fibrous tumour which had undergone calcareous degeneration. It grew from the top of the uterus, and it was a question whether it should be regarded as intra-mural or sub-peritoneal. There was a thin layer of uterine tissue spread out over it. It was accidentally found after death by apoplexy.

The PRESIDENT thought that the growth appeared to be intra-mural.

Dr. ROPER also showed a tumour attached to the edge of a placenta which was itself apparently healthy. The child had died three days before delivery. The tumour had been examined histologically by Dr. Goodhart. His opinion was that it might be possibly regarded as of a sarcomatous or myxomatous character, but was probably rather a blood-clot which had undergone organisation. The patient had since had a living child.

### *A Case of Secondary Puerperal Hæmorrhage.*

By Mr. C. S. REDMOND.

The patient had been married nine years, and was delivered naturally at full term, being attended by a midwife. The placenta was quickly expelled. About a month after delivery, hæmorrhage came on, and the woman lost a great deal of blood. Mr. Redmond was then called in, but as she declined vaginal examination, and was suffering no pain, he contented himself by prescribing ergot, and ordering rest. The next evening, however, hæmorrhage returned, and he found her almost collapsed. An examination was then made, and a piece of placenta found firmly adherent close to the fundus. This

was broken up by the fingers, and removed, and cold water was then injected. Bleeding however continued, and six ounces of the liquor ferri perchloridi, with twelve ounces of water, were then injected, and completely stopped the hæmorrhage. Two days after, considerable febrile disturbance occurred, the pulse being 114, and temperature 103°. The discharge was slightly offensive, but there was no pain nor tympanitis. Carbolic acid injections were used, and improvement followed the use of enemata. After the febrile symptoms had lasted about a week, the patient convalesced. The author thought it rare to have hæmorrhage occur so late, without any sanguineous discharge having continued in the interval. He asked the opinion of the Society why so much fever had followed the use of the perchloride of iron. In two other cases in which he had used it, nothing of the sort occurred.

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*A Case of General Dropsy in the Fœtus with Hypertrophy of the Placenta.*

By Dr. BASSETT.

In January, 1877, the author was called in to a case of difficult parturition. After labour had lasted most of the day the membranes ruptured at 5 P.M., and one hour later the head was born. Labour then came to a standstill, and ergot was given without obtaining any advance, although pains were vigorous. The author on his arrival found this state of affairs, the patient being in her third pregnancy, having been unusually large before labour, and the foetal movements having been felt shortly before. He gave chloroform in order to make a complete examination, and found the head in the third position. No foetal pulse could be heard. He found no evidence of monstrosity, but could not pass up his hand by the side of the head. He then fixed a blunt hook in the axilla, and by this means delivered without much difficulty. The foetus was found to be affected by general dropsy, and its abdomen was distended by straw-coloured fluid. The placenta was much enlarged and very soft, weighing 3½ pounds. In twelve hours it discharged one pound of fluid. In some similar cases the dropsy had been ascribed to premature closure of the foramen ovale. In this instance, however, the foramen ovale was found to be normal, and the ductus arteriosus was patent. The cause, therefore, did not lie in the foetal circulation, especially since no interference with the growth of the child had taken place. The overgrowth of the placenta was, therefore, probably primary. There was no evidence of syphilis. During labour the mother's kidneys acted freely, although her urine contained a small quantity of albumen. The state of the foetus could not, therefore, be ascribed to a renal affection of the mother, and the condition appeared to be rather analogous to that in cases of hydramnios, the pathology of which was obscure.

Dr. JOHN WILLIAMS said that little was known as to the causation of dropsy in the foetus, and the opinions held about it were inferences derived from the case of the adult. General dropsy had been ascribed

to cardiac obstruction, but this cause never produced general dropsy in the adult. The result was dropsy of the extremities, the parts most distant from the heart, aided by the effect of gravity. General dropsy was always due to blood poisoning, generally renal. The result of cardiac disease of the foetus would be dropsy of the most distant part, namely, the placenta. This might obstruct the circulation through it, and so cause general anasarca ; but the placenta had also a glycogenic function like the liver, and was also an excretory organ, taking, in great part, the function of the kidneys. For the foetal kidney was blocked by epithelium, and the liquor amnii often contained only a trace of urea, while the urine in the bladder also contained very little. Hence interference with the placenta might cause general anasarca in the foetus, just as Bright's disease did in the adult. In the case recorded there was evidently *œdema* of the placenta, the cause of which was not obvious, and secondary general anasarca. Such anasarca in the foetus was always due to imperfect interchange in the placenta. Inflammation of the peritoneum and pleuræ was apt to occur in such cases, just as in Bright's disease. The cause of albuminuria in pregnant women had been ascribed to pressure on the veins ; but these lay in hollows, out of the way of pressure, and are protected by a cushion of intestines. Immense tumours, moreover, existed without any albuminuria ; also albuminuria was sometimes found at the fourth month of pregnancy, when pressure could not be the cause. The explanation was that the excrementitious products of the foetus accumulated in the maternal blood, and disturbed the balance of renal functions, when that was liable to be easily upset.

Dr. EDIS said that he felt much diffidence in commenting on the practice of such a man as Dr. Bassett. But when the head had been born for an hour, surely it was needless to give chloroform to make an examination, and it would have been better to bring down an arm, and break up the wedge formed by the shoulders. He should himself, in such a case, have proceeded at once to expedite labour.

Dr. ROPER said that when the head had been born an hour, it was pretty clear that the child was dead, and that it was delayed by some morbid foetal condition. In a recent case of his this was due to decomposition of the foetus and swelling of the abdomen. He perforated thorax and abdomen, and cleared out their contents with the crotchet, after which he extracted with the crotchet in the axilla.

The PRESIDENT regretted that no reference had been made to the researches of Sir J. Simpson on the subject, or to others published in the first or second volume of the *Obstetrical Transactions*. Knowledge could only be advanced in the future by recording minute details of the condition of the placenta in such cases.

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#### *A Case of Complete Rupture of the Perineum.*

By Mr. CHARLES ROBERT THOMPSON.

The patient was a primipara, aged twenty-four, the head in the first position. Foetal movements had ceased six days before labour. After



the birth of the occiput, the head was delayed for some time, the neck being much swollen. It was eventually delivered, however, without the smallest injury to the perineum, and the skin was found to be peeling. After the birth of the head the arm of the child suddenly appeared at the anus; and with a violent pain the whole of the perineum was ploughed up by the arm. The fœtus proved to be œdematous. Two silk sutures were at once inserted with a curved needle. The catheter was afterwards used at intervals by the nurse. The stitches were removed on the third day, and good union was procured. The bowels were moved naturally, and no escape took place into the vagina. The author thought that his case was probably unique, and that it would afford an encouragement to repair any injury to the perineum at once, by whatever means were at hand.

Dr. HAYES thought there were two points of interest in the case. First, the use of silk for the suture; secondly, the early period at which the stitches were removed without disastrous result. He had found good results from the immediate operation. He should not have thought silk would answer so well in a complete rupture. He used it, however, in incomplete ruptures, since it caused less discomfort to the patient than wire. He generally kept the sutures in five or six days. He mentioned one case of a fair result from an operation performed a good many hours after the rupture.

Dr. BANTOCK hoped that the time was near when all would agree to recommend the immediate operation. He rather wondered that difference of opinion still existed, since the results obtained by it were so good. The material did not matter much, but wire certainly caused discomfort. He himself recommended silk-worm gut, which caused much less irritation than silk. He mentioned a case in which the sutures were accidentally left until the fourteenth day, instead of being removed on the fourth or fifth. Not the slightest irritation or inflammatory blush had resulted.

Dr. WYNN WILLIAMS recommended that the first material and the first needle at hand should be used. In the country formerly he had often used common thread and a common sewing needle.

Dr. MURRAY said that it was perhaps better that the accident should not occur at all. He had learnt at Vienna the practice of making slight lateral incisions of the vaginal orifice with a view to prevent rupture. He had three or four times saved in this way a perineum which had given way on a previous occasion.

Dr. EDIS thought it was undesirable to allow the bowels to be confined four or five days. In the case recorded they were opened on the fifth day. The first part of the motion was lumpy, and required assistance from the nurse. This must have involved risk. At his Lying-in Institution he gave directions that he should be sent for within twelve hours. He used silver sutures, and covered the ends with gutta-percha to prevent annoyance from them. After thirty-six hours he gave a very small dose of castor oil, and afterwards kept the bowels open daily.

*A Case of Meningocele Complicating Labour.*

By Dr. S. WORDSWORTH POOLE.

The patient had a slightly contracted pelvis, and had been delivered several times before, either by forceps or version. When called in, the author found the membranes unruptured, and no presentation could be made out. The position of the foetus was partly transverse. Bi-polar version was attempted, but the head would not recede, and the child was then turned by the internal method. A large cyst was found attached to the back of the head, and the child had also a hare-lip and cleft palate, and its eyes were minute. It lived two days. The cyst was fourteen inches in circumference, and was made up of three lobes. It was translucent during life, and pressure on it produced no effect on the child. At the autopsy it was found to spring from an opening between the parietal bones, the cerebral convolutions projecting just into the opening. It was continuous with the right lateral ventricle, to the walls of which cysts were attached. The left lateral ventricle was normal. The fluid measured fourteen ounces. It resembled normal cerebro-spinal fluid, being of specific gravity 1008, of a slightly sherry colour, and containing a trace of albumen. The pedicle could have been ligatured without pressing on cerebral matter.

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*A Case of Double Vagina and Uterus.*

By Dr. GERVIS.

The patient was twenty-seven years old, had been married four years, had had no children, but probably one miscarriage. Menstruation had been regular before marriage, profuse and frequent since, and always accompanied by pain. Severe dyspareunia existed on some occasions but not on others. On examination this was explained by the existence of a double vagina, separated by a septum from one twelfth to one eighth of an inch in thickness. The left vagina was larger than the right. At the top of each vagina was a cervix, with a small os uteri. A probe could be introduced into the left for half an inch, into the right for an inch and a half. The septum between the vaginæ was divided by the galvanic ecraseur, and the dyspareunia thereby completely cured. The dysmenorrhœa was relieved by the occasional use of the sound.

Dr. PLAYFAIR mentioned a case recorded by Dr. Ross, of Brighton, in the *Lancet* some years ago. Two full-term children were born at an interval of two months, and two uteri were found to exist, which had become impregnated separately. The woman had had five children normally before.

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*Notes on Extra-Uterine Pregnancy.*

By Dr. MADGE.

The author remarked that in the discussion on Mr. Jessop's case of gastrotomy for extra-uterine foetation little reference had been made to

the pathology of the case. He now embodied in a paper some remarks which he had intended to bring forward on that occasion. There was much obscurity as to the causes of extra-uterine foetation. Some authors made out eight or nine varieties of it, while some denied the occurrence of primary abdominal or ovarian gestation. But there was no reason to doubt that they occurred sometimes. He had examined with Dr. Phillips the case of Dr. Martin, recorded in *Obstetrical Transactions*, vol. xi. This was made out to be ovarian. Mr. Jessop's case was clearly abdominal, and many similar were to be found in literature. He had obtained from Mr. Jessop answers to a series of nine queries about his case. The Fallopian tubes were not seen; the placenta was everywhere adherent to the peritoneum; no membranes were seen at its edges or elsewhere; the child was as fully developed as if intra-uterine. The membranes had probably been absorbed at an early stage. In such a case there could be no decidua, and therefore there must be an absence of the sinus system, and of the so-called curling arteries and veins. A membrane formed by plastic exudation was substituted for the decidua, allowed of interchange of fluids, and the nourishment of the foetus was thus provided for. The placenta must belong entirely to the foetus, and he believed that it did so almost entirely, even when intra-uterine. The foetus was found loose in the abdominal cavity. The bursting of the sac was generally followed by death; but this case would seem an exception. The conditions existing raised many questions, such as the uses of the liquor amnii, the disposal of the foetal urine, the origin of the vernix caseosa, which was here abundant, &c.

The PRESIDENT said that these remarks would have been very interesting at the time, but were now in great measure lost, since all the details of the case were scarcely retained in every one's memory.

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#### *Four Cases of Removal of Large Uterine Myomata by Abdominal Section.*

The author remarked that the results of Péan gave hope that this operation would emulate the success of ovariectomy. Of his own four cases one was in hospital, three in private practice. Two recovered, and two died. The first case had been already reported to the Medico-Chirurgical Society. She was thirty-four years old, and the operation was performed on account of recurrent intestinal obstruction, due to a myoma. She recovered, and still continued well. She was unmarried. Menstruation did not recur after the operation. The second case was that of a woman aged forty-five, who had a rapidly-growing soft myoma, reaching almost to the xiphoid cartilage. The tumour moved freely, and there was much ascitic fluid. The operation was performed in hospital. The incision was eight inches long, and the cervix was clamped externally as a pedicle, about  $1\frac{1}{2}$  inch above the os. On the third day tympanitis set in, and she died on the fifth day. It was found that the uterine cavity entered the tumour

for about six inches. The third case was that of a single woman, aged forty-one, with a multiple myoma reaching above the umbilicus. It was freely movable, and had branching nodules. There was no distress, except occasional pressure on the intestines. The author urged her to leave it alone. She returned, however, in May, 1876, determined to have the operation performed. The tumour was removed by an incision six inches long, and the pedicle secured by a large calliper clamp. The tumour weighed nine pounds. Only half an inch of the uterine cavity had been removed. Fifty hours after the operation vomiting and tympanitis set in, and she died on the third day. The fourth case was that of a patient suffering from a tumour of somewhat doubtful nature, and which gave a deceptive fluctuation. The sound passed only the normal length, but the uterus moved with the tumour. The patient was at first advised to wait. When she came again, in November, 1876, there was but slight increase. In July, 1877, an attempt was made by a medical practitioner to tap, after which the tumour grew rapidly, and the girth of the abdomen increased four inches. The operation was performed on August 6th. Even when the tumour was laid bare, it was impossible to determine its nature, till the broad ligaments and ovaries were seen attached at its base. Large sinuses coursed over its surface. The incision was fourteen inches long, and some adhesions had to be separated. The pedicle, which was as thick as the wrist, was secured in a large calliper clamp. Much blood escaped when the tumour was cut off, but none was allowed to enter the abdomen. The wound was closed by eleven deep and two superficial sutures. The tumour weighed 20 pounds, 4 ounces. Recovery was uninterrupted. The tumour proved to be an oedematous myoma, and shrunk one-third after immersion in spirit.

Dr. FANCOURT BARNES mentioned a case in which his father operated last year, Dr. Braxton Hicks being also present. A mass was fixed in the pelvis posterior to the cervix, and distress had recently come on. There was great difficulty in raising the tumour out of the pelvis at the operation, and the posterior part of it was found to be gangrenous. The patient died thirty-six hours after. The tumour was a myoma about eight inches in diameter, and in the midst of it a small embryo was unexpectedly found.

Dr. PLAYFAIR said that in the third case, which proved fatal, the symptoms were slight, and Mr. Tait did not advise the operation. Why was it done? He thought it required more justification than the mere wish of the patient for the performance of such an operation, since the course of a fibroid tumour was not usually fatal. It should not be performed unless the life of the patient were seriously in danger. He mentioned a case in which he saw Mr. Spencer Wells operate, in which it was agreed to adopt that measure, the diagnosis being uncertain beforehand. The patient died twenty-four hours after.

Dr. ROUTH said that the great point to be determined was how the pedicle should be treated. In his Lettsomian lectures some years ago he had collected cases in which the pedicle had been treated in



various ways. He found that in most death occurred from the slipping either of clamps or ligatures. He then drew the conclusion that the pedicle should always be transfixed. Certainly the rule should be never to listen to the mere wish of a patient as to operation. He had now under his care two cases of these enormous tumours, which were quite mobile, but accompanied by great hæmorrhage. One was that of a lady only twenty-five years old, and a fine singer. If usefulness were interfered with, he thought we were justified in operating, when the tumour was immense, or hæmorrhage was great. But in one of Mr. Tait's cases he thought the operation was not justified. The continuous galvanic current was sometimes of avail.

Dr. AVELING once operated on what he believed to be ovarian dropsy, and finding a uterine tumour, proceeded to extirpate it. The patient died on the second day. The great difficulty he found was that of dealing with the broad ligament.

Dr. BANTOCK said that patients lived many years with large fibroids, and the operation was therefore seldom required; but sometimes it did become necessary to do something. To justify the operation it was essential that about the normal length of the uterus should remain free below to use as a pedicle. He had seen Mr. Spencer Wells perform it repeatedly. In most of these cases, such a fair pedicle was present. No method as to the pedicle had as yet shown superiority. He recommended the transfixing the broad ligament by a series of ligatures, each looping into the next, chain fashion. Then the uterus itself should be transfixed; but the uterus was different from the pedicle of an ovarian tumour. There were no vessels whose internal coats could be divided by the ligature, but these were simply closed by apposition. Without any slipping bleeding might recur; he therefore should not omit to insert a drainage tube. When death occurred from bleeding, it was rather from septic change in the blood effused than from the actual quantity lost.

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## OBSTETRICAL SOCIETY OF EDINBURGH.

*Meeting, Wednesday, 25th April, 1877.*

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### *Description of an Acardiac Fœtus.*

By Professor ALEXANDER RUSSELL SIMPSON, M.D.

The monster which I have to bring under the notice of the Society was brought to me on 23rd March, by a midwife who is in the habit of attending parturient women of the poorer classes, with the following history:—

Mrs. C., aged twenty, gave birth to her first child, a girl, on the 25th December, 1873, being then sixteen and a half years of age, and to a second girl on 14th June, 1875. The labours on both occasions were easy; the children, well-formed and healthy, were nursed by the

mother. She fell in labour at the full term of her third pregnancy, on 17th March, 1877, and, as usual, after a labour which was not attended with any notable escape of liquor amnii or other special feature, a healthy, well-developed, but small-sized, girl was born. The umbilical cord was tied in two places, and divided between the ligatures. The child was laid aside, and the nurse was holding the cord, without, she avers, making any traction on it, when the mother gave a sudden movement to the side, and the umbilical cord, to the length of six or eight inches, came away in the nurse's hand. She felt anxious as to the escape of the afterbirth, but had not long to bethink herself what to do when the placental mass came down the vagina, and along with it the misshapen twin. She cannot tell how or when this body got detached from the placenta. It was placed at once in the water in which the child already born had first been washed by another woman; and, as blood was escaping, the navel was tied with a piece of tape. As is customary among people of their class, the placenta, which had only a fragment of one cord attached to it, was burnt. The strange body was first buried in some out-of-the-way place, but was exhumed and brought to me on the sixth day afterwards, as I have said.

It was still in a state of good preservation, and presented in a very marked degree the features of the so-called *fœtus acardiacus*, or heartless *fœtus*. It consists simply of the lower part of the trunk and two inferior extremities. It measures  $5\frac{1}{4}$  inches in length,  $5\frac{1}{2}$  inches in breadth, and  $2\frac{3}{4}$  inches in thickness from before backwards. The limbs are of unequal size, the right measuring at the broadest part of the *fœtus* three inches, and the left  $2\frac{1}{2}$  inches in breadth. They each have the appearance as of a thick fleshy thigh, with a dimple deeper in the right than in the left at the knee, and terminating abruptly with only a stumpy constricted intervening leg in a misshapen foot. The right foot is turned so that the sole looks upwards, and presents two digits which have rudimentary nails, and may stand for the great and little toes, with a space between them. The left lies folded in front of the other, with the sole turned inward and upwards. Two digits united together, but having each indications of nails, may represent the first and second toes; a small toe with a less marked nail grows a few lines apart at the outer side. The trunk is very short, and measures only  $2\frac{1}{4}$  inches from the summit to the junction between the limbs. On the ventral aspect at its lower part, and slightly to the left of the middle line, can be seen the projecting umbilicus open and with some coils of small intestines protruding from the opening. A fringe of membranes which has been torn off the placenta is still attached to the right and lower margin of it, and in this lower portion a bloodvessel of crow-quill size is to be seen. On the posterior aspect, a small fold of dark red skin is found in the fork between the limbs, attached to the right, but close to the fissure between them. It is evidently the indication of the attempted deve-

lopment of a genital organ; and, as the co-twin is a female, it probably represents the right labium or nympha. There is a small depression immediately behind it, which may represent either the vulva or the anus, but which admits a fine probe only to the depth of a line or two. Through the kindness of Professor Turner, the foetus has been injected for me by Mr. Stirling of the Anatomical Museum. The fluid introduced through the vessel already referred to passed freely into the body till all the cutaneous vessels became deeply injected, and also those in the walls of the protruded intestinal coils.

The central portion and the right limb only have been dissected, the left leg being left intact to show its original appearance. The skeleton of the trunk is represented by an imperfect pelvis, in which the sacrum and coccyx are absent. The innominate bones are fixed together along the surface that corresponds to their usual sacro-iliac joint and the rough surface behind. The several sections of the bone are still distinct one from the other; the pubic portions being in the most rudimentary condition, and their bodies united by a broad intervening band of tendinous tissue. The neck of the thigh-bone is very short; otherwise the femur is well formed and articulates with the tibia at a knee-joint, of which the only marked peculiarity is the absence of the patella. The tibia and fibula are fixedly flexed to the femur at an angle of about  $55^{\circ}$ . In the foot we find the calcaneum proportionally large and fixed with the navicular bone; otherwise the tarsus and metatarsus are normal. The central metatarsal bone, however, terminates in a blunt point without articulating extremity. The first and second have articulated to them a single set of phalangeal bones; but these are broad, as if composed of two sets fixed together. The same arrangement obtains in regard to the fourth and fifth.

The subcutaneous cellular tissue was remarkably cedematous, so that in making the dissection it was constantly necessary to wipe the cut surface with a sponge; and the limb, which before being cut into seemed plump and tense, became shrunk and shrivelled afterwards.

The gluteal muscles, and most of the muscles of the thigh and leg, can be recognised and dissected, but they all present a striking peculiarity—a peculiarity which I have not found noticed in other cases of this kind. For whilst their outline and arrangement sufficiently indicate their nature, instead of presenting the usual red soft fleshy appearance of muscular masses, they are of a dull yellow colour and firm consistence, and look as if made up of solid pieces of fat. On examination with the microscope, the usual outline of muscular fibres can be seen in them; but the transverse lines are absent, and on the application of ether the substance melts almost completely away.

The only viscera in the body are some portions of the intestinal canal. A piece of gut, four inches in thickness, which is clearly

recognisable as the rectum, occupies the pelvis. It is closed inferiorly, and does not communicate with the depression observed in the cleft between the nates, though it can be traced close down to it. The upper extremity reaches up to the umbilical canal, within which it tapers somewhat suddenly to a thickness of only one inch. Here a bend takes place, which reminds one of the sigmoid flexure of the colon; and the rest of the intestinal tube, which protrudes through the umbilicus, is folded in convolutions, and ends in a blind extremity, which adheres by cellular tissue to the margin of the orifice. The upper part of the rectum and the narrow coils are invested with a serous membrane, which also lines the umbilical canal; but there is no distinct shut sac. Nowhere is there any trace of urinary or generative organs, with the exception of the fold of very vascular skin already noticed on the inner posterior aspect of the root of the right thigh, and beneath this the cellular tissue is very deeply injected, and reminds one of the aspect of an erectile tissue.

The vascular arrangement is of the simplest. The bloodvessel into which the injection was thrown, and which I may speak of as the afferent vessel, and which opens at the lower margin of the umbilical ring, runs down the left side of the umbilical canal, accompanied by a slightly smaller and here efferent vessel, till it comes close to the middle of the left ilio-pectineal line. Here it throws off a branch to the left limb, and then travels round behind the bowel till it reaches the posterior part of the imperfect pelvic brim, when it turns abruptly downwards and forwards. As it travels along the right ilio-pectineal line, it dips under the efferent vessel to pass out of the pelvis towards the inner side of that vessel. This relation of these bloodvessels leads me to regard what I have called the afferent vessel as the vein, and the other as the representative of the arterial system, and the further distribution in the thigh confirms this idea. For at the groin the afferent vessel, which, as I have said, lies to the inner side of its companion tube, gives off a division which corresponds precisely in its distribution and relations with the external saphena, while the other portion goes down among the muscular masses along with the efferent vessel, to which it presents the ordinary relations of the internal saphena with the femoral artery. These venous tubes, indeed, are so far unlike the saphenous vessels that they are destitute of valves; but, on the other hand, the imperfectly-filled vessel which runs in the course of the femoral artery has thin walls, which more resemble those of the venous than the arterial system. This efferent vessel after crossing over the vein, as has been described, about the middle of the right side of the pelvis, sends a branch to supply the rudimentary intestines, which have been very deeply injected through it. This branch enters the intestinal tube at its posterior aspect, and just beyond it the main division is joined by the corresponding vessel from the left side, whence the short common trunk passes up the umbilical canal towards the umbilical aperture, in which it lies inferiorly to the larger and fully-injected afferent vessel. In this arrested



body, also, we thus find the blood, such as it is, making its entrance by a vein, and escaping through an ill-developed artery.

The history and structure of this foetus quite bear out the ingenious theory of Claudius\* that, in this variety of monstrosity, we have to do with the arrested development of a twin whose umbilical vessels had acquired an anastomosis with the corresponding vessels of its more completely developed neighbour. According to this theory, the twins are developed from a single ovum. Soon after the formation of the allantois, a bloodvessel of the one foetus inosculates with a bloodvessel of the other. The streams of blood from the two hearts meet; that which comes from the twin with the stronger heart first arrests the course of blood in the other, and then causes a reflux of it towards the weaker heart. There coagulation of the blood and atrophy of this unused heart take place, and, whilst the heart of the stronger foetus continues to send on the main current of its blood towards the placental villi, it sends also a side stream back into the body of its co-twin. This stream travels most easily through pelvic and femoral vessels; and hence it is that most of these acardiac bodies are more perfectly developed inferiorly than superiorly. This common imperfection of the upper part of the body has led to their being spoken of by some as acephalous, or headless. But the designation is not by any means satisfactory, seeing that, as in this instance, not only the head, but the whole upper part of the trunk, may be wanting; and, on the other hand, there are several instances recorded where the acardiac foetus had little more than a rudimentary head, and was acormous or trunkless. Whatever be the form assumed by the arrested twin, the blood that circulates through it, entering by a single vein and escaping by a single artery, is blood that has already passed through the body of the better-growing foetus. The nutrition is thus extremely imperfect; but few organs show traces of development, and even in these, the tissues present a low embryonic type of structure.

Dr. MATTHEWS DUNCAN thought this the finest specimen of an acardiac foetus he had seen, and considered the facts brought out on dissection interesting and likely to prove interesting in the future study of the subject.

Dr. ANGUS MACDONALD then continued his paper "On the Bearing of Chronic Disease of the Heart on Parturition and Pregnancy," and in connexion with the paper showed a heart with a rare form of lesion—constriction of both mitral and tricuspid valves.

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*Meeting, Wednesday, May 9th, 1877.*

Professor SIMPSON, *President, in the Chair.*

Dr. JAMES CARMICHAEL exhibited a foetus from a case of miscarriage at the sixth month. The ovum had been expelled, as would

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\* "*Die Entwicklung der herzlosen Missgeburten*," Kiel, 1859. Cf. Förster, *Die Missbildungen des Menschen*, p. 58.

be seen, in its entirety. The placenta was much degenerated. The patient was about thirty years of age, and had contracted syphilis about ten weeks after impregnation. She was now suffering from secondary symptoms.

Professor SIMPSON showed a mucous polypus, which had caused a good deal of bleeding. He had removed it with the ecraseur. The patient had been under the care of Dr. Watson of Mid-Calder.

Dr. CRAIG exhibited the nails of a newly-born child, which were of unusual length.

Dr. ANGUS MACDONALD then concluded his paper "On the Bearing of Chronic Disease of the Heart on Pregnancy and Parturition," part of which had been read to the Society at the last two meetings.

Dr. MATTHEWS DUNCAN thought that no paper of greater importance and interest had ever been read to the Society. It was, strictly speaking, a pathological one. Yet many points brought forward bore upon and explained some of the physiological processes connected with pregnancy. He considered the paper would remain as a landmark on the subject.

Dr. UNDERHILL thought that, in face of a paper with so much matter, it was hardly possible to discuss it in the usual manner. To him many points were quite new, more especially that of the danger of a contracted mitral valve to pregnant women. He warmly commended the paper.

Professor SIMPSON considered the paper one of great interest and value.

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*Meeting, Wednesday, May 23rd, 1877.*

Dr. JAMES YOUNG, *Vice-President, in the Chair.*

Dr. JAMES YOUNG read the following note of a case of partial placenta prævia :—My only reason for troubling the Society with a brief note of this case, is the peculiar interest attached to all cases of hæmorrhage, as well as the comparative rarity of instances where the placenta forms the presentation (1 in 500).

In dealing with such cases, we must recollect (although a disputed question) that the hæmorrhage must be, to some extent, unavoidable, owing to the progressive dilatation of the os uteri—widely differing from the hæmorrhage in accidental separation of the placenta, which may be induced by a false step or other accident—while, in placental presentations, the rupture of the utero-placental vessels is due to labour pains, and therefore unavoidable.

The grand consideration in all such cases is the treatment which will result in the speedy delivery of the woman, which is essential for her life, as well as that of the child.

Some obstetricians maintain that the causation of bleeding in placenta prævia is the same as in cases of accidental hæmorrhage. Rupture of utero-placental vessels doubtless takes place in both forms

of hæmorrhage ; but, in the latter, care and prudence might prevent what in the former would result independently.

Having been requested to attend C. R. in her confinement, I was hastily summoned at 3 o'clock P.M., on 16th April. I found several marked symptoms of placenta prævia. The patient informed me, that at 12 P.M., she had awakened because of an excessive discharge of blood. Having obtained some assistance, she rose and sat on the bedroom utensil, which was almost immediately filled three-fourths with pure blood. She had had very little pain ; but, having swallowed some laudanum, she got back to bed, and sought no further help till the hour above stated. The hæmorrhage had continued during the morning, and throughout the day, in small quantities. On examination, I found a considerable portion of the placenta lying over the left margin of the internal os uteri. The pains were very slight ; but, nevertheless, the bleeding continued, although not immoderate. I resolved, as the patient was fully eight and a half months pregnant, and the bleeding had been excessive and was continuous, to encourage the labour. The os uteri, which was about the size of a shilling, was slightly dilated with the finger, and a portion of the placenta was partially separated. The membranes were easily ruptured by the careful introduction of a pointed pencil. I now left for two or three hours. At 8 o'clock, the os was still only slightly dilated, and the bleeding continued. I carefully inserted a gum-elastic male catheter into the uterus on the right side, and left it, having somewhat carefully adjusted it with tapes. Pains speedily supervened, and labour went on slowly till 2 A.M. (17th April), when the os was fully the size of half-a-crown. The hæmorrhage was checked by the descent of the foetal head (the presentation being natural) against the lower portion of the placenta. At 8 A.M. the patient was delivered of a healthy girl.

Considerable hæmorrhage followed ; but the placenta was speedily and easily extracted. She made a good recovery. On examination of the placenta, immediately after its expulsion, it was found that a fifth part was quite cold, but perfectly healthy in texture.

Dr. BURN, in similar cases, had used the vaginal plug to stop bleeding when the membranes were unruptured, and found the plan invariably successful. He thought it hazardous in first cases even to rupture the membranes so soon as Dr. Young had done. In many cases he found the use of a sponge-tent advantageous.

Dr. MATTHEWS DUNCAN thought the introduction of a Barnes's bag or sponge-tent would have been good practice.

Dr. OGILVIE WILL had lately attended a patient with placenta prævia in a case of twins. He had ruptured the membranes and turned with success.

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#### *Case of Procidencia Uteri.*

By J. MATTHEWS DUNCAN, M.D.

In former writings on this subject, especially in the *Edinburgh Medical Journal* for January 1872, I have insisted on the purely

mechanical nature of this disease; that it is like a dislocation or a hernia; that, if hypertrophy favours its production, it is by the increase of weight it implies; that, if relaxation or laceration of tissues favour its production, it is by removal or diminution of resistance. I have also insisted on the misleading character of the nomenclature generally used, pointing out that the womb is most unfortunately chosen to give a name to the disease, for the bladder or the vagina more frequently occupies the place of ringleader in the mischief than the womb; that the womb indeed, in the great majority of cases, is a chief agent in restraining or diminishing the mischief, trying to keep back the descending parts, and while refusing to descend frankly, suffering tensile elongation, not hypertrophic elongation. These and many other important points in the pathology of this important disease I need not here further enumerate.

The paper to which I have referred is entitled "Procidentia of the Pelvic Viscera," and properly so, as it was to them exclusively that I wished to direct attention. But that designation is far from being an unobjectionable one, for in an ordinary case of procidentia uteri it is not the pelvic viscera only that are displaced. The disease is one affecting fundamentally the retentive power of the abdomen. The negative condition of this power leads to retroflexion, retroversion, descent of and procidentia of the uterus, to hernia, to piles, and probably to some mucous polypi of the uterus, and to many other diseases.

In a case of procidentia uteri, it is not only the pelvic viscera that are displaced downwards, but the whole or a part of the abdominal viscera, and parts external to the abdomen, as the pudenda and the hips. The descent of these last can be easily seen by any one observing a case in which the procidentia is quickly reproduced after reposition. This quick reproduction of the disease is nearly an exact copy of its original production; only, that what may have originally taken a year or years to effect, is now, after replacement or being undone, reproduced in a minute by the voluntary bearing-down effort.

These views have an inalienable right to guide practice. Without true views we can only expect to arrive at right practice by hazard. The maintaining of the replacement of the procident organs is generally done by a small amount of force. Very often restoration of the perinæum is sufficient. Sometimes it is not.

The following case I give from the notes of my clinical clerk, Mr. Stuart Palm. It is valuable because of its long history. It was carefully described in my case-book in 1866, and is now under observation in 1877. During the interval of eleven years it has undergone many remarkable changes, which are also instructive.

A. P., æt. 41, unmarried, was confined of twins fourteen years ago. She made a good recovery. Three months afterwards, having taken a walk, she observed that her womb came down. Since then the protruding mass has increased.



In March 1866, about three years after the first descent, the procident mass was examined by me. It was of the size of a large turkey's egg. The entire infravaginal portion of the cervix was ulcerated, the ulcer having raised red edges. The os tinæ gaped so as to admit a finger easily. The supravaginal portion of the cervix was elongated, and the neck of the womb could be felt ascending into the pelvis. The uterine sound passed inwards five and a half inches from the os tinæ. The fundus uteri was in the hollow of the sacrum. The perinæum was entire, but virtually destroyed by being pressed back by the protruding mass. At the left side of the orifice of the urethra was a deep ulcer large enough to hold a split pea. There were two ulcerations of a like size on the side of the vagina, the posterior being at the site of the opening of the duct of the vulvo-vaginal gland; they bled when touched, and had the appearance of recent wounds.

All the details of the further history of the case may be passed over, except that the usual operation for restoration of the perinæum, with a view to maintain reposition of the displaced organs, was successfully performed. The patient on 10th April was dismissed from hospital, cured.

But the cure was not lasting. Three months after the operation the womb again became procident, and it has remained so ever since, that is for eleven years.

She now complains that her menses come on every fortnight, last for a week, and are occasionally profuse. She has bearing-down pains, difficulty and pain in micturition and defecation, and irritability of bladder.

In April 1877, fourteen years after the first descent, and eleven years since the date of the first examination of her case, the following conditions are observed.

The procident mass is four inches in the anteroposterior, its greatest diameter, and about half as much in the transverse diameter. There is no infravaginal portion of the cervix uteri. The os tinæ is a minute opening without any neighbouring discoloration or prominence to attract attention to it. An ordinary uterine probe does not pass through it, but may be forced. It enters  $2\frac{1}{4}$  inches. The fundus uteri can be felt in the prolapsed mass in front of and below the anterior edge of the perinæum. An ovary can be felt behind the ascending ramus of the left ischium. The uterus is slightly retro-flected. The urethral orifice is surrounded by an irritable sore which is deep posteriorly. The bladder is in its ordinary displaced situation and healthy, as far as can be made out. The rectum is not pouched anteriorly. Upon the middle of the posterior wall of the vagina is a rounded ulceration with elevated red edges, of about an inch and a half in its largest diameter.

These conditions, and the contrast of them with those observed eleven years previously, deserve to fix the attention of obstetricians; but it is only to some of them that I at present refer.

The infravaginal portion of the cervix has become atrophied

and disappeared, while the uterus was procident and before the menopause.

The whole uterus has become atrophied before the menopause, and not in connexion with abortion or delivery at full time.

The ulceration of the cervix has during the same time disappeared.

The os uteri, from being large and patulous, has become minute, while the uterus was procident and before the menopause.

Menstruation with copious discharge takes place through the unnaturally small os without any dysmenorrhœal pain.

Menstruation is too frequent and too abundant from an atrophied uterus of  $2\frac{1}{4}$  inches in length.

While the size of the procident mass has increased, the length of the uterus or of its cervix has diminished. The whole uterine cavity was  $5\frac{1}{2}$  inches long; it is now only  $2\frac{1}{4}$ . This distinctly confirms an observation by J. Veit,\* that complete uterine procidentia is (generally) a consequence of incomplete procidentia with cervical hypertrophy, through secondary atrophy.

Cases like that just related form for the gynæcologist a comparatively easy problem. Among the more difficult are the cases of procidentia of the elongated cervix in pregnancy, or when the uterus is fixed above the pelvic brim, being enlarged by a fibroid. At present there is under my care a large procidentia in which the uterine body is fixed high in the pelvis by a large cystic tumour with which it has connexion. In this case the procidentia is a true vaginal rectocele, the rectum being deeply pouched anteriorly. The cervix uteri is not procident, nor yet hypertrophied as a whole, but there is tensile elongation or hypertrophy of the posterior lip to the extent of an inch beyond the limit of the anterior.

Progress in our intelligence of exceptional or uncommon cases like that last alluded to is to be made by further researches into the retentive power of the abdomen, such as that of Odebrecht.†

Dr. YOUNG thought the subject interesting, and the paper a practical one. He had lately seen a case from the country in which the procidentia was extreme, the uterus was enlarged, and the patient complained of an irritating discharge from the womb. He thought it would be interesting to know, in Dr. Duncan's case, what had been the cause of the alteration in size of the uterus.

Dr. UNDERHILL drew attention to the fact which Dr. Duncan sought to establish, that in these cases the whole of the abdominal organs were drawn down. This, although noted by some of the older authors, was lost sight of in many of the text-books of the present day. He had met with a case of procidentia in pregnancy—patient miscarried at the third month; the cervix was fully four inches in length. Dr. Duncan's case was peculiar, from the atrophy which

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\* *Zeitschrift für Geb. und Gyn.*, 1877.

† *Berlin Klin. Wochenschrift*, 1875, No. 14.

occurred when hypertrophy would more naturally have been expected.

Dr. GORDON had frequently met with cases of procidentia. In many the patients had used ring gutta-percha pessaries with singular advantage.

Dr. DICKSON stated a case in which, during the time a patient was wearing a ring pessary, a post-rectal abscess occurred.

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*Some Remarks on Fibrous Tumours of the Uterus.*

By Dr. ENGELMANN, of Kreuznach.

Within the last nine years 72 cases of fibrous tumours of the womb have come under my observation. To my own patients may be added 297 cases of my late father's practice, of which I possess his strict remarks. The greatest part of our patients belong to the better-situated classes, therefore I came to different results from what other authors have found, who had observed patients of different classes.

Three hundred and seven of our patients were married, 62 not married; a proportion of about 5 to 1.

In Germany the proportion of married to single women between twenty and fifty is about 9 to 7. I found that the proportion of married women, suffering from fibrous tumours, to single ones is 35 to 7, so that married women are more than six times more disposed to these growths than not married.

The number of cases is not considerable enough to give a faithful result, but I think we may be allowed to conclude, that Virchow and others are not right in saying that single women are specially disposed to fibrous tumours, and that the non-exercise of sexual functions is a cause of their forming.

With reference to the age, I found the following data:—

Of married women, under twenty years . . . .	—
between 20 and 30 . . . .	34
between 30 and 40 . . . .	104
between 40 and 50 . . . .	143
above 50 . . . .	26
Of unmarried women, under twenty years . . . .	4
between 20 and 30 . . . .	14
between 30 and 40 . . . .	18
between 40 and 50 . . . .	21
above 50 years . . . .	5

Most of other authors found the greatest number of women affected with this disease between the ages of thirty and forty, the time of the most energetical exercise of sexual functions; I found most cases, at least of married women, between forty and fifty. The difference may be caused by most of my patients having suffered for some time from their tumours, and having been under treatment for some years before coming here.

Somewhat different I found the proportion if I looked at the period

at which the symptoms characteristic of the disease first manifested themselves.

On this point I have made observation in 253 cases.

The symptoms began under twenty years . . .	6
between 20 and 30 . . .	48
between 30 and 40 . . .	124
between 40 and 50 . . .	75

In more than half the number of the patients the first symptoms commenced between thirty and forty years of age. A great part of my patients have certainly been suffering from small tumours for some years, before such symptoms appeared that made them conscious of some mischief; therefore I may say that the period when sexual life is most active is the time when fibrous tumours begin with predilection. It is doubtless that sterility is frequently the consequence of the tumours.

Of 307 married women—have never borne . . .	78
only miscarriages . . .	15
births and miscarriages . . .	66
only births . . .	148

About half the number had borne children. So we ought to say that fibroids are not such an obstacle to fertility as is generally regarded. But I believe this is not quite correct. I have no doubt that a good number of women who have borne were quite well at that time, and the tumour began afterwards, perhaps in consequence of the childbed. To decide this question, I inquired very exactly in all cases that came under my observation within the last five years, if the women fell in the family-way after the first symptoms of the disease were felt. I have notices on 38 cases, in which at least five years were passed from the first beginnings of the symptoms. Five of my patients had never borne; three had miscarried before the symptoms began. I think that in these eight cases the tumour existed a long time before it gave symptoms, and was the cause of the sterility or miscarriage. All the other thirty women had borne before symptoms were felt. Eleven of these had never again come in the family-way, seven had undergone one or several miscarriages, and only twelve had borne after the beginning of the tumour. These twelve had borne 25 children. Six out of the twelve had borne 1 child, three 2, one 3, one 4, one 6. It is very striking how many pathological deliverances and irregular childbeds I found among the 25. Four times severe hæmorrhage took place after the deliverance; twice the child had a wrong position; four times the forceps was applied, because the labours ceased; once the placenta had to be removed artificially. The childbed, too, was very irregular in many cases; nine times inflammation broke out more or less severe; twice abundant hæmorrhages of long duration. All these patients were suffering from small tumours; only one had a very large growth, and it had lately much increased in size. The tumour was situated in eight cases in the fundus uteri, three times in the posterior, once in



the anterior wall. If I look again at the details I mentioned, I find that only twelve out of thirty women had another deliverance after the tumour began ; almost two-thirds of them got sterile. The twelve had borne 25 children. Eleven deliverances were pathological, and twelve childbeds irregular. Only five out of thirty women had regular deliverances and childbeds. These numbers are not considerable, but I think they show that the influence of a fibrous tumour on conception, bearing, deliverance, childbed, is much more serious than generally is supposed. I presume in all cases of fibrous tumours there must be a cause, but not always are we able to find it out. Hæmorrhages in the tissue of the womb, or residuals of inflammations, may form the origin of the tumour. I do not believe that every clot of blood or every scar must be organised to a tumour, but I think it may be so, if a certain predisposition exist. Perhaps the disturbance of the circulation in the womb, which remains for some time after inflammation is over, may help the growing.

To find out if my opinion is right, I examined 65 of my patients very precisely on this point.

Five of my patients reckoned the beginning of their complaint from a miscarriage. Four of them had been in good health before this accident happened, without any symptom of a disease of the womb. Three had borne at the right term, and the childbed was normal. Two became afterwards again in the family-way, but pregnancy ended before the term.

In 13 cases the patients had the first symptoms after delivery and childbed. Only two had hæmorrhages before ; the others were without any symptoms of disease of the sexual organs. All had undergone a dangerous delivery with hæmorrhages, or inflammation in the childbed.

In one of these cases it was very interesting to observe the effect of a direct and constant pressure on the womb. I found the retroflexed uterus fixed by a solid band to the posterior wall of the pelvis, and where this band was inserted to the womb, there was a fibrous tumour of the size of an orange.

Fifteen of my patients dated the tumour from an external insult that affected the womb directly or indirectly. In four cases it was the raising of a heavy weight ; three, a fall on the abdomen ; one a jump out of a carriage ; four times, a severe cold ; twice, over-exertion at the time of the menstrual period ; twice, a severe typhoid fever. After all these accidents an inflammation or hæmorrhage took place. I do not enter more into particulars of these interesting cases, as I have published them already.\*

In 32 cases out of 65 which I have noticed, I could not make out any direct cause of the growth. Here the symptoms generally manifested themselves by degrees, and only the increasing pains, hæmorrhages, or other symptoms had induced the women to ask for assistance.

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\* *Zeitschrift für Gynäk, u. Geb.* Band i. Heft. 1.

My experience in the treatment of the tumours naturally refers principally to the use of Kreuznach waters. On operative treatment I have but little experience. In two cases only I had occasion to accelerate the enucleation of tumours already beginning by incision of the cervix and the capsule. But I do not hesitate to adopt the opinion that in all favourable cases operation is the only way of treatment that promises with certainty a complete cure. All other remedies are more or less uncertain.

The subcutaneous injections of ergotine, recommended by Professor Hildebrand of Königsberg, I tried in eight cases. I used this sort of treatment only with patients who took the mutterlaug bath in the summer. In most cases the result was very satisfactory, and I can recommend this method, if used in right cases. The women must not be too weak and old, the tissue of the womb must still have some liability to contract, the muscles must not be too much degenerated. The tumour itself must at least, for some part, be surrounded by the substance of the womb, not too much grown into the cavity of the peritoneum or of the womb. The effect depends also upon the character of the tumour. The best results we will have with comparatively soft tumours, which have grown rapidly. The effect will be very little in cases of very large tumours, hard and long-standing, with old and weak patients. It had not the least effect in three of my patients, two of whom I still have under observation. In all three the women were old, more than fifty; two were married, but had never borne; one was unmarried; all suffered from very hard large tumours. In every case I made a very great number of injections in the period of about half a year, but the result was almost none.

I might explain this fact from the manner the ergotine acts on the organic muscles of the arteries and the womb. It brings on contraction of these muscles, and influences in that way the nutrition of the tumour. If the tumour has but very small nutritive vessels, or if the muscular tissue of the womb is almost lost, the effect of the contraction cannot be but very little.

In five of my cases, where the constitutions were more favourable, I had a very satisfactory result, principally with the young patients between twenty and thirty, suffering from pretty large tumours of quick growing.

Very disagreeable is the pain after the injection, which lasts sometimes for hours; occasionally I have seen erysipelas breaking out from the small wound; a painful infiltration of the cellular tissue, that lasts for some days, is very frequent after the injection; a painful contraction of the uterus is generally to be felt, sometimes as severe as labour pains. All this causes this sort of treatment not to be very much in favour with patients, at least if the evident effect makes itself awaiting. I also doubt whether the long use of such a strong remedy as ergotine may not have a bad effect on the whole organism. For we cannot expect that the effect of the ergotine is limited to the

organic muscles of the uterus only and its vessels, and that all the other organic muscles of the system are not affected by it. It is still an open question if the change of nutrition in the different organs, resulting from the contraction of the vessels, may not have bad consequences. I observed sometimes want of appetite, diarrhœa, headache, giddiness, after the prolonged use of injections. I also noticed disturbances of the action of the heart, a very irregular intermittent pulse—symptoms so serious, that I interrupted the injections for some time.

The Kreuznach mutterlauge baths act in a similar way to the injection of ergotine. If a strong irritation acts on the nerves of the skin in some extension, the organic muscles of the womb contract.

On this irritating effect on the skin depends the efficacy of Kreuznach baths in all forms of tumours and swellings—at least for the greatest part.

If we look at the elements of the mutterlauge baths we find that indeed they are powerful enough to produce a considerable and long-lasting irritation of the nerves of the skin.

The Elisabeth spring of Kreuznach contains as principal elements in 16 ounces of water—

Chloride of sodium	. . .	73'00 grains
Chloride of calcium	. . .	13'25 „
Bromide of sodium	. . .	0'30 „
Chloride of lithion	. . .	0'075 „

A bath used at Kreuznach generally contains about 300 litres of water—equal to 600 pounds. So we have in a bath of pure mineral water—

Chloride of sodium,	$600 \times 73'00 =$	43,800 grains.
Chloride of calcium,	$600 \times 13'25 =$	7,950 „
Bromide of sodium,	$600 \times 0'30 =$	180 „
Chloride of lithion,	$600 \times 0'075 =$	45 „

We use very rarely pure baths in forms of tumours of the womb, but we render them stronger by addition of mutterlauge, which is an extract of the mineral water. The water being evaporated in large pans for the yield of the salt, there remains in the pans after the salt is taken out a yellow, oily liquor, of a sharp, bitter taste, and a very high specific gravity. In this liquor are dissolved all the elements of the water, with exception of a part of the chloride of sodium, in a very concentrated form.

Professor Bunsen, of Heidelberg, found in sixteen ounces of the mutterlauge 3146 grains of fixed elements, the principal of which are—

Chloride of calcium	. . .	2,552 grains.
Chloride of lithion	. . .	111 „
Bromide of sodium	. . .	55 „

We add to the bath between three and ten litres of mutterlauge, sometimes even more. In a bath of six litres of mutterlauge, equal to

eighteen pounds by weight, for instance, we have  $18 \times 3146 = 56,628$  grains of fixed elements, and these are principally—

Chloride of calcium,  $18 \times 2552 = 45,942$  grains.

Chloride of lithion,  $18 \times 111 = 1,998$  „

Bromide of sodium,  $18 \times 53 = 954$  „

To this must be added the elements of the water of the bath; so we have in a mutterlaug bath of middle concentration not less than *fifteen pounds* of fixed elements, which all more or less affect the skin—*i.e.*, seven pounds of chloride of sodium, as much chloride of calcium, two ounces of bromide of sodium, and almost five ounces of chloride of lithion.

I will here, by-the-by, direct attention to the large quantity of chloride of lithion found in the mutterlaug. From the time it was detected, the baths and the water are much used in all forms of gouty disease, and I am very satisfied with the effect.

We use the water also internally, but I think the principal effect of it will be to act as an aperient. More efficacious is it used externally in the form of bath, compresses, douches, and injections into vagina and rectum.

I give the bath generally every day; only, with delicate people it is better to have it every other day. For the beginning, the patients stay only a short time, about ten minutes, in the bath; every day a little longer, up to half an hour; in rare cases even as long as an hour. I give generally the three or four first baths without mutterlaug, then I begin with small doses, half a litre or a litre, and increase this dose every day, up to four till ten litres. The concentration of the bath depends upon the constitution of the patient, the sensibility of the skin, the nature of the complaint, &c. It is of great consequence to take care as to the temperature of the bath. If taken too warm, it acts very exciting, weakening; and generally a temperature of  $92^{\circ}$  F. will be most convenient. The bath is generally taken in the morning, after digestion of breakfast is over. Perhaps the time before going to bed would still be better, for it is very useful, and even necessary, that the patient should go to bed for some hours after the bath, to conserve the congestion of the skin, produced by the irritation of the water, for some hours. Another method to applicate the mutterlaug are the compresses. I have found them very efficacious; they act like the full bath, by a prolonged irritation of the skin. Their effect depends upon the concentration of the water, and the time they act on the skin. If well applied, they must cover the whole abdomen, as well on the front as on the back, and must lie the whole night. The lotion with which they are impregnated generally may be as strong as half mutterlaug and half water—only, in cases where the skin is very insensible, as it is after the long use of ointments and iodine tincture, we use it stronger. After some time the reaction of the skin begins to be too great; a rash is coming out, and pustules are forming, so that it is



necessary to interrupt the use of the compresses or to make them weaker.

Very often the use of bath-specula is recommended by medical men who send patients here. I have used them formerly very frequently, but lately I have given them up entirely, for the benefit they bring is certainly inferior to the harm. Very rarely they are used in the right way; and if not well applied, they irritate the vagina and the uterus, and bring on leucorrhœa and even inflammation, as I have seen once. The douche I use very seldom, and only in the form of an irrigation, when leucorrhœa is very bad.

With predilection I make use lately of injections into the rectum. I take salt water progressively made stronger by mutterlauge in proportion of one part to eight or ten. The injection must not be more copious than two ounces, in order that it may be easily retained. It is applied by use of a small indiarubber balloon. The best time for it is after a motion of the bowels has taken place. The injected water is absorbed very rapidly. I use rarely the hip-bath, and only to soothe pains. Their effect cannot be very great in comparison with the full bath.

I have described the details of the treatment of fibroids of the womb at Kreuznach so minutely, because I wish that the artificial Kreuznach mutterlauge bath may be used in the same way. Very often I have occasion to see the mutterlauge is not used in the right way. Generally the baths are taken much too weak. A concentration of two or three litres is regarded as very strong, and such an artificial bath is not so strong as a plain salt-water bath used here; or patients are advised to use hip-baths with half a pint of Kreuznach mutterlauge. Such weak baths never are able to produce any good effect. If the artificial baths are used as strong as the bath here, I have no doubt the effect will be much the same. And very easily they may be tried at home, for the mutterlauge is sent abroad without any serious impairment of its virtue; only you must be careful that it is not adulterated, as happens very frequently. The best way to procure it is to have it sent directly from here by writing to the administration of the Kurhaus. It will also be much less expensive than if bought at the chemist's. Ten litres in a tin bottle you pay with three marks, sixty.

About 100 litres of lauge are wanted if each bath is used three times, as may be done without any serious loss of effect. We may only expect a good effect of the baths, if they are used a long time—the same as the injections of ergotine. If the patients have not sufficient time, it would better not to begin at all, and spare time and expenses. Generally, I think, forty may be the right number; much more are not to be tolerated, because by the constant irritation of the skin an excitement of the nervous system breaks out.

In cases of large, hard tumours, it is even necessary to make a pause of some weeks after the first forty baths, and then to begin again. Sometimes one summer will not be sufficient to bring on a

real, lasting, good effect; then it is necessary to use the baths for several succeeding years. In these cases I recommend my patients to take a good number of artificial baths during winter, so that the effect of the water may be more continued. The more persevering patients are, the better the result will be.

What is now the effect of the use of mutterlauge baths in the forms of fibrous tumours of the womb? Is it likely that such a tumour is absorbed entirely? Or are they right who say that no medicament whatever is able to bring a fibroid to absorption? I have no doubt that sometimes, in favourable cases, fibrous tumours are absorbed by the use of Kreuznach mutterlauge baths. I have myself observed a good deal of cases where it was so, especially three, where no doubt could be that the diagnosis was right, for the tumour was situated in the posterior wall, and could be easily felt by the rectum. Some months after the use of the bath not a sign of a tumour could be found, not only by myself, but by others who had treated the patients before. Such a good result we may not always expect. But what we may expect in most cases, and what I have occasion to prove very frequently, is the swelling of the womb getting smaller, softer. And it is not only the engorgement of the uterus that gets smaller by the use of the water, but the tissue of the fibrous tumour itself, as I had occasion to observe very precisely several times. I would not say that always we have such a good result, but in all favourable cases we have. The patient must not be too weak, too bloodless; the tumour must not be too hard, too large, too long existing. In these cases we must be contented if the bad symptoms get better, such as pain or hæmorrhages, and if the tumour ceases, at least for some time, to increase in size.

But even if the tumour itself is scarcely affected by the baths, they show their effect on the tissue of the womb; that is always more or less enlarged. So the general swelling gets smaller, and, in consequence, the pressure on the nerves of the bladder and the rectum gets less. The influence on the hæmorrhages is sometimes really surprising. If I resume my experiences on the effect of Kreuznach mutterlauge baths on fibrous tumours of the uterus, I find these results:—

1st. A complete resorption of the tumour is rare, and only to be expected in very favourable cases.

2nd. In a great many cases the tumour itself diminishes in size.

3rd. In cases of very large or hard tumours of long existence, they are not affected at all; but only the engorgement of the uterus.

4th. Always the general health of patients is improved.

Dr. YOUNG thought the treatment of fibrous tumours one of great interest. As the treatment, other than hydropathic, had lately occupied the attention of the Society, he considered it hardly necessary to revert to it on the present occasion. He might mention, however, that he did not consider ergot of much use in these cases, although, in some instances, it was considered beneficial, and he had used it very frequently in cases of fibrous tumour. He had met with a case in which there existed a fibrous tumour in the anterior

uterine wall; the patient married, became pregnant, and was safely delivered.

Dr. CROOM thought ergotine of great service, and regretted that the experience of some of the Fellows should be to the contrary. He had met with a case some time ago of miscarriage, in which he afterwards discovered a fibrous tumour. In this case ergotine was injected twice a week for three years. The patient became again pregnant and miscarried, and he then found the tumour much smaller, and could not doubt but that the ergot had materially lessened the size of the tumour, and diminished the risk of bleeding.

Dr. MACDONALD, not having been present at the previous discussion of this subject, desired to make a few remarks. In his experience married women with fibrous tumours were oftener sterile than fertile. As regards the treatment by ergotine, he must enter his caveat against the opinion expressed from the Chair that this drug was of no use, for in many cases in his practice it had been of service. Lately in the case of a patient from England, bleeding of many years' standing in a fibroid uterus had been entirely stopped by the use of ergotine. The cases, however, must be carefully selected, and those that were most favourable were such as presented general enlargement and were of a rather loose texture. He had frequently seen painful nodules arise at the part where the ergotine was injected; and on one occasion had met with a stinking abscess. But in that case he believed the ergotine was not in good condition. It ought always to be freshly prepared. As to the hydropathic treatment of such cases, he had to confess that he had failed to grasp the theory of the treatment as advanced by Dr. Engelmann. In regard to the evil effects of ergotine, there was a certain class of cases in which it could not be borne on account of pain, sickness, and prostration.

Dr. JAMES CARMICHAEL alluded to the fact of abscesses forming in some cases at the site of injection of ergotine. He had heard of a case in which pyæmia had been induced in this manner after delivery.

Dr. MATTHEWS DUNCAN had used ergotine extensively in treating fibrous tumours, and although he could not speak definitively on the subject he thought it of value in proper cases. With reference to the remarks upon the injurious local effects of ergotine injection, he attributed these to the abundance of bacteria, which were readily formed in such solutions. They could be effectually destroyed by boiling the solution. The value of this paper, in his opinion, lay in the views expressed by such an able and unprejudiced observer as the author, on the use of Kreuznach water in these cases. He was in the habit of regularly sending patients to Kreuznach, and he believed the beneficial results of treatment had not been exaggerated by Dr. Engelmann.

Dr. GORDON thought it wonderful what nature could effect in these cases in the way of cure. He knew of many cases of spontaneous cure, which in his opinion rendered the results of other treatment doubtful.



## Obstetric Summary.

*The Effect on the Fœtus of Morphia administered to the Mother.*

Professor Lusk, in the *American Journal of Obstetrics* for July, 1877, gives the result of a series of experiments made to decide the question, lately discussed at the Obstetrical Society of New York, as to the effect of morphia administered subcutaneously during parturition in producing asphyxia of the new-born infant. The experiments were carried out by Dr. F. E. Beckwith. In a series of normal cases, eight in number, careful observations were made as to the state of the child's pupils, the cry after birth, and the tendency to sleep; also of the average number of respirations after birth, the average number of heart-beats in the first stage of labour and after delivery, as well as of the weight of the child, and the duration of the second stage of labour. In a second series of eleven cases morphia was given, and the same points observed, as well as the degree of narcotism produced in the mother. In seven cases twelve minims of Magendie's solution were used hypodermically, in one case twenty-four minims, and in one case three-fourths of a grain of morphia were given by the mouth, and twenty-four minims of Magendie's solution injected hypodermically. In this last case, while the mother's pupils were contracted, those of the infant were unaffected. Eight of the women slept from the morphia given, but none showed any signs of laboured breathing or cyanosis. Asphyxia of the fœtus occurred three times—once in the normal series from a second stage of labour prolonged to three hours, and in the morphia series once in a breech case, and once from compression, as evidenced by the moulded head and overlapping sutures. In this case the pupils were the largest recorded in the two series. No artificial respiration was required in either of these cases, and no exceptional drowsiness was observed subsequently. In the normal series the children often slept steadily, if undisturbed, from two to eight hours, and in the morphia series no difference was observed. The average frequency of the pulse and respiration, and the average size of the pupils, were somewhat greater in the morphia series than in the normal one, probably an accidental difference. The author concludes that there is no reason to apprehend any direct effect to the child from morphia hypodermically administered to the mother during labour.

Dr. Lamadrid, of Brooklyn, narrates a single instance, from which he arrives at an opposite conclusion.

A lady, in the seventh month of pregnancy, was treated for neuralgia by morphia. On the first day she took, in three hours, three-eighths of a grain of morphia, or perhaps more according to the size of the spoon; the next morning, the remainder of the mixture, containing one grain of morphia in all. The same day she got another prescription containing the same quantity of morphia and hydrate of chloral together, as the former had failed to relieve her permanently. The fœtal movements, which before had been lively, ceased since the second day after taking her neuralgic medicine, and about two weeks



after a still-born child was delivered, which was somewhat discoloured, and the skin peeling. No history or sign of syphilis could be discovered in husband or wife, and, on careful examination of the placenta, no fatty degeneration or other diseased condition of that organ could be detected.

Dr. Gillette, in the October number of the same periodical, contends that in Professor Lusk's cases no effect upon the children was found, because the drug was not given in sufficient degree to produce decided narcotism in the mothers. Although the doses were considerable, he considers that, as it was given only shortly before the active stage of labour, the patients were more tolerant of it from the pain they were suffering. Dr. Gillette now narrates fifteen additional cases in which morphia was administered to the mother during the first and second stages of labour, at times sufficiently early to subject the foetus to its influence, and in labours complicated in no way. In carrying out these observations, no regard was paid to the *quantity* of the drug given, the only desideratum being that, short of utterly prostrating the woman, a decided degree of narcosis should occur in some of its forms—such as sleep with partial anæsthesia, slowing and irregularity of respiration, congested dull facies, contracted pupil, or itching of the nose or other regions. All the children are described as having shown more or less of asphyxia or narcosis; but all revived either spontaneously, or by the aid of artificial respiration. In some, contraction of the pupils was noted. The doses given were twelve or fifteen minims at a time of Magendie's solution hypodermically; and this was generally two, and sometimes three times repeated, at intervals of two or three hours. The total quantities administered varied from twelve to thirty-six minims.

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### Gynæcic Summary.

#### *Gastrotomy in a Case of Irreducible Retroversion of the Uterus.*

Dr. Kœberlé relates a case in which irreducible retroversion of the uterus gave rise to intestinal obstruction which could not be overcome, and in which permanent cure, not only of the ileus, but of the retroversion, was effected by gastrotomy. The patient, the Countess B——, twenty-seven years of age, of hysterical temperament, had suffered from obstinate constipation, and had passed nothing for more than four months. At intervals she had fæcal vomiting. The breath was fæcal, and nausea continual. For seven months she had been confined to her bed, and for two months had been nourished by milk alone. The abdomen was distended, and the left flank filled by stony fæcal masses. The rectum was empty, and the uterus completely retroverted, the os looking forward and to the right. The condition was attributed to a fall from a carriage six months previously. All efforts to restore the uterus failed, it being impossible to pass the sound through the internal os uteri. The patient had consulted twenty-five eminent practitioners, and the most various and energetic treatment had remained without effect.

After trying in vain enemata and drastic purgatives, Dr. Kœberlé resolved on operative interference—not on account of the retroversion, but to relieve the obstruction. He resolved, however, also to cure permanently the displacement by excising one ovary, and fixing its pedicle to the abdominal wall, as in ovariectomy. The incision in the abdominal wall was not more than 5 cm. long in its deeper part. The index and middle fingers were introduced, and hooked round the retroverted fundus. This yielded suddenly, not without some force, being impacted by the intestines, full of scybala, which lay above it. The intestines were then kneaded by the fingers, to make the scybala progress towards the rectum. The left ovary was drawn into the angle of the wound, and with the outer part of the Fallopian tube surrounded by an iron-wire ligature, with the aid of a *serre-nœud*, as in ovariectomy. They were then fixed by a steel pin, passed above the ligature, and the superfluous portion cut off. Convalescence was rapid, as after a very easy case of ovariectomy. A large quantity of hard scybala were passed spontaneously on the first day, and an enormous quantity after an enema of senna on the third day. The colic and vomiting immediately disappeared, menstruation was afterwards normal, and the patient enjoyed good health for the next four years.

She then again came under observation with vaginismus, constipation, and vesical tenesmus. Profound hysteria had become established, in consequence of a reverse of fortune. She believed her uterus had become again displaced in consequence of a second fall from a carriage, and she was extremely eager to have the whole organ excised. She was much emaciated, spent most of her time reading in bed, with the room much heated, and the bowels acted only about once in three weeks. Dr. Kœberlé found, however, that the uterus remained in a somewhat anteverted position, and the use of the sound showed that it was still firmly attached to the anterior abdominal wall, since it was impossible to turn it into a position of retroversion or retroflexion. — *Gazette Médicale de Strasbourg*.

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*Distension of a Fibroid Uterus with Serous Fluid.*

Dr. Worms relates two cases of uterine myoma in which intermittent distension of the uterine cavity by fluid gave rise to physical conditions resembling those of a fibro-cystic tumour. The first case was that of a woman, aged thirty-six, who had a median abdominal tumour as large as the uterus at the fifth month of pregnancy, which was sometimes quite hard and sometimes fluctuating. When it was fluctuating, pressure upon it caused the escape of a clear yellowish fluid through the cervix, which was high, central, and closed. Similar discharges took place spontaneously, especially at the approach of menstrual periods. The patient was seen in consultation by Velpeau and Nélaton, who, after much hesitation, were in favour of the view that the tumour was a tubo-ovarian cyst communicating with the uterus. As years passed, however, the growth of hard

prominences on the surface of the tumour, and the persistence of metrorrhagia, made it clear that the growth must be really a myoma.

The second case was that of a woman, aged forty-five, who had a tumour of ten years' standing, continuous with the cervix, and as large as the uterus at the seventh month of gestation. This had all the characters of a myoma, but the sound could only be passed two centimetres. Occasionally the tumour became partially fluctuating, and then clear watery fluid could be expelled through the cervix by pressure, as in the former case. The same fluid was also discharged spontaneously. It had the chemical and physical characters of serum, an acid reaction, and presented nothing particular under the microscope. In this case it was positively proved that the fluid could not come from any cavity in the tumour itself. The cervix became dilated, severe uterine pains set in, and the tumour began to present at the os. It was detached by scissors from a base 10 cms. in diameter at the fundus of the uterus without great loss of blood. Suppuration afterwards took place, and the patient had severe septicæmic symptoms, but eventually recovered, and the uterus was afterwards of normal size and movable. The tumour excised was as large as a foetal head at full term. It was a compact myoma, but little vascular, and presented no trace of a cavity. The author considers that the fluid may have been a kind of œdema of the tumour itself, which transuded through its surface, or more probably was secreted by the altered uterine mucous membrane, as in case of essential hydrops uteri. He refers to a third case bearing on the question—that of an operation at which he was present in the early days of ovariectomy. The patient had a large fluctuating tumour almost filling the abdomen. On tapping the cyst, after incision of the abdominal wall, only serous fluid escaped, and it was then recognised that the uterus, distended by an enormous myoma, had been opened. Excision of the tumour was attempted, but with a fatal issue.—*Archives de Tocologie*, September, 1877.

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#### *Hypertrophy of the Supra-vaginal Cervix.*

In a lecture delivered at the Hôtel Dieu, Dr. Guérin discusses hypertrophy of the supra-vaginal portion of the neck of the uterus, associated with external protrusion of the os, as an affection simulating true prolapse of the whole uterus. He adopts in the main the views of Huguier as to the pathological condition existing and its importance, although not quite to the full extent. Thus while Huguier, in the cases of external appearance of the cervix, found sixty-two times hypertrophic elongation, and only twice true prolapse, Dr. Guérin finds true prolapse to be not unfrequent, but yet regards hypertrophy of the cervix as being the commoner. He explains very clearly the reason of the disappearance, in such cases, of the vaginal portion as a separate structure, so that it often appears, although not actually the fact, that while the supra-vaginal cervix is greatly lengthened, the vaginal portion is shortened. The mucous



membrane of the vaginal portion is, he says, really a continuation of the vaginal mucous membrane, reflected over the cervix. When the vagina has become inverted, the vaginal walls are stretched into a straight line from the vulval aperture to the margin of the os, and by this tension the mucous membrane of the vaginal portion becomes loosened from the muscular tissue beneath, and the line of demarcation between it and the vagina is no longer distinguishable. Thus in proportion as the vaginal culs-de-sac are obliterated, so is the distinctness of the vaginal portion of the cervix destroyed.

The author thinks that Huguier was too absolute in maintaining that in these cases the fundus remains at its normal level, and admits that eventually it is frequently lowered in some degree. He points out the significant fact, that while the supra-vaginal cervix is so greatly elongated, its thickness is rather diminished than increased. He does not, however, take this as evidence that the condition is due, in part or in whole, to the effect of tension; but, on the contrary, discountenances the view that the cervix is pulled by the vagina, holding that the vagina is pushed by the hypertrophied cervix. Hence, as might be anticipated, his views of causation are somewhat vague, and we are told only that repeated deliveries, and occupations like that of a laundress, which involve much work in a standing posture, predispose to the affection.—*Archives de Tocologie*, August, 1877.

#### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

“Leitfaden der Operativen Geburtshülfe.” Von Dr. A. Martin. Berlin, Hirschwald: 1877. Pp. 346.

“On the Etiology of Hydramnios.” By Henry Gervis, M.D.

“Treatment of Diphtheria.” By E. N. Chapman, A.M., M.D. Buffalo: 1877.

“On Abnormal Softness of the Multiparous Uterus.” By Graily Hewitt, M.D., F.R.C.P. London: 1877.

“Question de la Stérilité Subordonnée dans Certains Cas aux Dérivations Utérines et du Redressement de celles-ci par la Méthode Utero-Vaginale Ignée.” Par le Dr. Abeille. Paris: 1877.

“Report of a successful Case of Cæsarian Section after Seven Days’ Labour.” By Edward W. Jenks, M.D. New York: 1877.

“Affections of the Nipple and Breast incident to Early Lactation.” By E. W. Sawyer, M.D. Chicago: 1877.

Communications received from Dr. Aveling, Prof. Stephenson. Dr. Sloan, Mr. W. Adams, Mr. J. Knowsley Thornton, Dr. Angus Macdonald, Dr. Underhill, Dr. R. J. Lee, Dr. Paterson, Dr. Ashburton Thompson, Dr. Wigglesworth, Dr. Dumotard, and Dr. J. Williams.

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Original Communications.

NOTE ON TWO CONTRASTED FORMS OF  
WEAK LABOUR.\*

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ALTHOUGH it is more than a generation since the great anatomical and physiological differences between the body and the neck of the womb began to be plainly discerned and generally known, the subject is even now far from being exhausted. It has already been a prolific source of additions to our knowledge and power, and it bids fair to continue to be still more so for some time, at least, yet to come.

My present remarks are based on my own verification of observations begun by Michaelis, but first brought strikingly under professional notice by Bandl, and added to by Litzmann, and most recently by Macdonald. These observations illustrate only one of the forms of weak, or nearly powerless, labour, to which I now direct attention. The other is trite. But although trite, and often truly recognised, it has been, and continues to be, generally confounded with the former, and that, no doubt, with injurious practical results.

The commoner kind of nearly powerless labour arises from inertia of the uterus. It is most characteristically observed

\* Read to the Obstetrical Society of Edinburgh, December 12, 1877.

in multiparæ who have had numerous children and are elderly. The uterus does not become stimulated to sufficient activity. The child's head may have reached the perineum, and makes no further progress. There is no urgency, perhaps, in the case; but the mere lapse of time renders delivery desirable. The inefficient pains, with the accompanying inefficient bearing-down efforts, are supplemented by traction with the short forceps, or by expression by the accoucheur's hands on the fundus uteri; and the child is brought into the world by a very small expenditure of force. Assumption of the erect position or voluntary bearing down may be enough, in some such cases, to complete a delivery which the uterine pains have failed to effect. After the child is born, retention of the placenta and hæmorrhage are very liable to occur.

The rarer form of weak labour is, in most respects, a contrast to the former. So far as my observation goes, it occurs chiefly in primiparæ, or young women who have a special nervous mobility. It is generally, but erroneously, included with the former kind under uterine inertia. The uterus is unduly, but morbidly active. Its tonic or permanent contraction, or its retraction, goes on with premature and injurious rapidity. The intermittent contractions or pains continue, and are painful, and force complaints from the mother, but they are inefficient, and may be justly called spasmodic. The uterine body, which covered the whole fœtus as far down as the brim of the pelvis—and had, in order to form such covering, a deep cup-like shape, the rim being attached to the expanded cervix—is now a mere cap or prolate dome-like covering of the lower fœtal parts. Its fundus is higher in the abdomen than it otherwise would be, and it extends downwards over the fœtus only to the extent of two or three finger-breadths below the navel, or even less. The pains are severe enough, but inefficient from want of scope of contraction. In this case the practitioner finding the head, we may suppose, near the perineum, expects difficulty and experiences none. Delivery is effected by the same means as in cases of the former category and with equal ease. After the child is born the placenta is easily extracted or expelled and hæmorrhage is very unlikely to occur—just as it is unlikely

to occur from the much and long retracted uterus of an ordinary tedious labour from mechanical obstruction.

I may here mention the joy with which I first, and not very long ago, recognised the latter class of cases. The patient was excessively nervous. Though healthy and of healthy family, she lived in a morbid fear of disasters, which was justified by no circumstance, and which nothing could even temporarily dispel. She had no deformity of pelvis, no rigidity of soft parts, no deficiency of uterine pains apparently strong; yet, when the head reached the perineum, while the pains continued severe, progress was arrested. In her first two labours I could not divine the cause, and this was the basis of my statement to the husband and friends, a statement as unsatisfactory to myself as to them. In her third labour the same course of events occurred, but then I carefully palpated the uterus; and, during a pain, easily diagnosed the lower margin of the uterine body little more than an inch below the umbilicus. The case was clear to me, though not so to the friends, who, however, were naturally quite satisfied with my declared recognition of its real nature. Delivery by forceps was effected without any effort worthy of the name of pulling: the child was little more than lifted out of the passages.

Weak labour from inertia of the uterus before the birth of the child is to be distinguished from nearly powerless labour arising from premature uterine retraction by the following circumstances:—

In the former, the pains are generally seldom, short, and cause little suffering. In the latter, they may be frequent and of ordinary duration, and painful. In the former, bearing down is generally slight or absent. In the latter, it is unaffected or powerful. In the former, the uterus proper is flabby, and its feeling under the hand during a pain is never that of great tension. In the latter, it is quite otherwise. In the former, the uterus is deficient in irritability under kneading or friction. In the latter, it is otherwise. In the former, the lower margin of the uterine body cannot be felt at all, or is indistinctly perceived immediately above the symphysis. It cannot be felt and recognised with ease. In the

latter, it is rapidly elevated to near the umbilicus as labour goes on, and is comparatively easily felt ; its hard and somewhat rounded edge marking a limit between it and the cervix ; the former hard and firm, and allowing nothing to be felt through it while pain lasts ; the latter thin and tight during a pain, and even then allowing the foetal parts to be felt through it.

Retraction of the uterus before the birth of the child cannot with propriety be described as premature when it is observed as it occurs most frequently—that is, in the course of labours in which the progress of the child is long obstructed. Then it arises from the well understood failure of natural and powerful uterine contractions to propel the child, while the natural continuous contraction produces its ordinary result, namely, retraction of the uterine body. This retraction is accompanied by elevation of the uterine fundus, and by dangerous elongation and thinning of the uterine cervix and adjacent vagina. In the cases which I have been describing there is no special difficulty in propelling the child, no obstruction, yet the continuous contraction goes on with rapidity. The retraction is truly premature, resulting in the development of a powerless labour before the process, otherwise natural and easy, is finished ; resulting also in the tensile elongation of the cervix uteri and vagina, with the well-known dangers of that condition—dangers, I may add, which Braxton Hicks has well illustrated in his paper on laceration of the vagina, published in the *Lancet* in 1869.

The importance, with a view to management, of timely recognition of the nature of a case of simply weak and ineffectual labour does not need to be insisted upon. The pathological conditions are so widely different in weak labour from inertia from what they are in weak labour from premature uterine retraction, that the same treatment cannot be expected to be applicable to both. Besides, the dangers to mother and child both before and after delivery are quite different in the two sets of cases.

In inertia, the uterus is to be stimulated by oxytocics, and the most powerful of these, ergot, may be used with advantage if the completion of delivery will not be long



delayed. The child is in no danger from the continuance of the labour, and the slowly increased retraction of the uterus produced by ergot interferes little with the expulsive forces ; and, after the birth of the child, will tend to make the third stage healthy and without dangerous hæmorrhage. If the ergot increases the pains or temporary uterine contractions, such increase can only be beneficial. Rapid or early delivery, however, is to be deprecated. The easiness with which the child is propelled is a chief source of danger, and it may be advantageous to obstruct delivery, for a few pains, by perineal pressure, in order to stimulate the uterus to more and yet more powerful action.

In premature uterine retraction the uterus is not to be stimulated, but soothed if possible. Opiates and chloroform may be of service with this view. Uterine oxytocics of all kinds are to be avoided ; they will increase the evil and the danger, not inconsiderable for both mother and child ; the danger to the former being connected with tensile elongation of the uterine cervix and vagina ; to the latter from compression and condensation, if not separation, of the placenta. Early delivery is desirable as soon as the inefficiency of the natural powers is demonstrated, for nothing but aggravation of the case results from delay. The urgency of the case is matter of actual measurement in one important respect. The more the uterus is retracted, the greater is the thinning of the cervix, and the greater the danger to the mother and child. The degree of retraction can be measured by ascertaining the distance of the lower border of the body of the uterus from the symphysis pubis on the one hand, and from the elevated fundus on the other.

With a view to simplicity, I have considered cases only which are uncomplicated. In both sets of cases it may be necessary to complete delivery artificially. In the easiest, expression by the method of Kristeller and others may be effectual. In any case, the forceps will not fail.

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## INFANTILE PARALYSIS;

THE CLINICAL HISTORY OF CASES WITH RIGID, AND  
THOSE WITH FLACCID, MUSCLES.\*

By WM. ADAMS, F.R.C.S.,

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IN the present paper I propose to offer a few remarks on a class of cases which come under the observation of all members of the profession, though at different stages, and under different circumstances; and those engaged in general practice have the opportunity of seeing them at an earlier period than they usually fall under the observation of the surgeon.

Under the term "infantile paralysis," two very different classes of cases are included, in both of which there is partial or complete loss of voluntary control over the limbs affected.

The two classes of cases are characterized by the condition of the muscles. In the one class the muscles are rigid, and in the other they are flaccid; and these two classes of cases present many differences in their clinical history, their pathology, and the results of treatment—differences which point to the necessity of close attention, and careful diagnosis in the early stage on the part of the medical practitioner, as well as in the later stage, when, from contraction supervening, the case may fall under the care of the surgeon.

In the first class, in which the muscles are rigid, the cases are generally spoken of as spasmodic, as distinguished from the flaccid or paralytic class. Dr. Little has described them as cases of "spastic contracture," and at the Orthopædic Hospital these cases were not considered to belong to the paralytic class. In practice, however, I find that authorities generally agree in classifying these cases as infantile paralysis, with which I think they may very properly be included.

*Cases of the First Class*, with rigid muscles are, sometimes, congenital; they occur in connexion with protracted and difficult labour, the children being born asphyxiated, and often thought to be dead; livid in colour, and not crying, or breath-

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\* Read at the Medical Society of London, November 19, 1877.

ing for some time. It is often several hours before the medical attendant thinks the child will live, and then some convulsive seizure frequently occurs.

The cerebral congestion appears to lead to subacute inflammation of the arachnoid at the base of the brain and upper part of the spinal cord ; and in the more severe cases, in which the mental powers of the patient are damaged, the substance of the brain is no doubt also the seat of inflammatory changes.

In one case of this kind, in a late stage, many years after the primary affection, I had an opportunity of making a post-mortem examination. The subject was a woman, who died in St. Thomas's Hospital. Both the upper and lower extremities presented the rigid contractions with deformities usually existing in these cases, and although nothing was known of her early history, no doubt could be entertained of the nature of the affection. I found considerable opacity and thickening of the arachnoid at the base of the brain, in its central portion, and also close adhesions of the arachnoid about the medulla oblongata and upper part of the spinal cord for about four inches. Here, then, were distinct traces of inflammation, such as we should imagine generally existed in the more severe forms of this affection. The specimen is preserved in St. Thomas's Museum. The structure of the spinal cord was not microscopically examined in this case.

Of the structural changes which occur in the muscles, both in the rigid and in the flaccid class, I have published some account in a paper in the Transactions of the Path. Soc., vol. iii., and in my work on "Club-foot."\* In the cases with rigid muscles, even of long standing, the ultimate muscular structure appears to undergo but little change, and I do not find the fibrous transformation described by M. Guérin ; whilst in the class of flaccid muscles, when the paralytic seizure has been too severe for recovery, fatty degeneration commences early, and proceeds to complete annihilation of the ultimate structure, leaving only fibro-cellular tissue, oil, and fat.

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\* "Club-foot." By William Adams. Second edition, page 382. London : Churchill. 1873.

*Clinical History.*—In the course of some months after birth, in the class of cases above referred to, with rigid muscles, various defects are observed, in proportion to the extent and severity of the mischief. In many cases, only a little stiffness in both legs is observed by the nurse, who finds she cannot separate them during the washing process as widely as in other children. In other cases there is a more general affection of the muscles of both legs, so that a tendency to contraction exists in all the joints, and the child is unable to stand.

In still more severe cases, one or both arms are affected in addition to the legs, the muscles being rigid and contracted. Strabismus also occurs, and the children articulate very imperfectly, and sometimes dribble ; it is in fact a general affection of all the voluntary muscles, and in these severe cases the mental faculties are more or less interfered with and weakened, the children having an idiotic appearance.

Similar cases, but generally in a less severe form, frequently occur between the ages of six and eighteen months, during the period of dentition, and are sometimes ushered in by convulsive affections ; and also at a later period of infancy, during the second dentition, or as the result of some febrile condition. In all these cases fewer muscles are involved, frequently only those of one leg and one arm, or of both legs ; the intellect is but rarely affected.

In some cases neither dentition nor any febrile attack precedes the paralytic seizure, and in the absence of any cause being assigned by the parents, a fall or injury is suspected, or some accident may even have been known to occur, and by this the surgeon or physician may easily fall into an error of diagnosis, unless he has some familiarity with this class of cases. This is illustrated in a remarkable degree by a case at present under my care, in which a surgeon attributed the paralysis to a fall, which was known to have occurred, and prognosticated a gradual recovery ; whereas in this class of cases there is never any natural tendency either towards improvement or recovery. A physician of equal eminence attributed it to an epileptic seizure, and advised that the young gentleman should be removed from the rest of the



family, and separately provided for, as he would be liable to epileptic seizures. In this particular class of cases, however, no liability to a second attack ever exists. It is unnecessary for me to make any remarks upon the great importance of such errors of diagnosis.

In reference to the surgical treatment of these cases in the later stage, when the limbs have become contracted, division of the tendons, to remedy the contractions, is often necessary, even in the most severe and apparently hopeless cases which occur at the period, or soon after birth. These cases are, however, unfavourable, in consequence of the general nature of the affection, involving, as it frequently does, both the upper and lower extremities, as well as the muscles of the trunk, so that the benefit is often very limited. Still, by the aid of tenotomy such children are often enabled to stand and walk, when they never could have done so without the operation, and their locomotive powers can subsequently be improved by shampooing and passive exercises. In such cases it is necessary that the parents should understand the exact objects of tenotomy, and the limit to the benefit to be expected.

In the less severe cases, such as occur in the later periods of infancy, when fewer muscles are involved, and contraction often limited to one or two joints, tenotomy is of the utmost value, not only in remedying any deformity, but in restoring the limbs to usefulness. An extreme degree of lameness is often removed, so that not more than a limp remains. In the upper extremity, when the hand and elbow-joint are contracted, all deformity may be removed, and the hand rendered useful for ordinary purposes, so that the patient may feed and dress himself, especially when the treatment has not been too long delayed without any attempt being made by shampooing and passive exercises, to prevent muscular wasting.

In all cases of this class, when tenotomy is performed, the after-treatment should be carefully conducted by gradual mechanical extension, so as to guard against imperfect union, as the newly formed connective tissue, or new tendon as it really is, is apt to become elongated and attenuated from a too rapid separation of the divided extremities of the tendon,

and not from any failure in the reparative power, which is always good in these cases of rigid muscles. This, however, is entirely under the control of the surgeon, who can regulate the extension, so as to procure the exact length of new tendon required in each case. If in the course of the third or fourth week the union should be feeble, he can check or reverse the extension, and retard the treatment ; or he could increase the rapidity of extension if the union should appear to be strong, and the new tendon too short for the purpose required. About six weeks after the operation shampooing and passive exercises should be commenced.

*Cases of the Second Class*, included in the group of "infantile paralysis," are characterised essentially by a flaccid condition of the muscles paralysed. This is the typical form of infantile paralysis—the essential or spinal paralysis of children described by recent authors—the rigid class, first described, not having been generally grouped with them.

In the clinical history of these cases are two remarkable facts—1st, the suddenness of the paralytic seizure, which in its more severe form is calculated to occasion the greatest anxiety and alarm, without premonitory symptoms or previous illness ; and 2nd, the tendency to spontaneous, and sometimes complete recovery. Children, apparently in good health, are put to bed, and in the morning it is found that one, or perhaps both legs are paralysed ; or it may be one or both arms, or it may be an arm and leg. Occasionally the paralysis is complete, involving both arms and both legs, as well as the muscles of the trunk.

In one case at the hospital, the mother told me that whilst her little girl was eating an orange she saw one of the arms suddenly drop to the side, and from that moment it remained paralysed. The mother at first stated that the child was perfectly well at the time, but afterwards admitted she gave her the orange because she was feverish and thirsty. This is important ; because, I think, it will generally be found that some feverish condition usually precedes the paralytic seizure, and this may explain the acute congestion, if not inflammatory exudation, which takes place in the grey matter of the spinal cord.

I have seen cases in which a child has suddenly lost the use of one of its legs whilst going upstairs, or walking on the pavement; and in all such cases the paralysis is erroneously attributed to a fall. One of the most severe cases I have ever seen was brought to me last week, November 16th. Miss E. W., aged nine, when five months old had a paralytic stroke. She was teething at the time, but not considered to be ill, and had been out in a hot sun during the morning. The nurse put her to bed in the middle of the day as usual, and she slept quietly, but on taking her up it was found she could neither sit nor stand. Both arms and legs, as well as the muscles of the trunk, were paralysed, and she could not even raise her head. The head fell forward on the chest when any attempt was made to raise her into the sitting position. The child remained in this perfectly helpless condition for about three months, and then began to improve naturally, without any special treatment being adopted. The hands gradually became useful, and the arms also recovered to a considerable extent; but at the present time the deltoid muscles remain almost completely paralysed. It is a remarkable fact that these muscles do not recover in a large number of cases. In this young lady both legs made a good recovery. There is, however, at the present time some little failure of power in the muscles below knee, and a slight contraction has taken place in the muscles of the calf in both legs, causing talipes equinus. The muscles of the trunk and neck recovered completely, and no spinal curvature has resulted—an event of common occurrence when recovery of the muscles of the trunk is slow.

I mention this case in illustration both of the suddenness of the seizure, and the completeness of recovery.

*Pathology.*—With regard to the seat and nature of the structural changes upon which this remarkable form of paralysis depends, some authors consider that it has not yet been determined whether the cases of paralysis with flaccid muscles really depend upon any central nervous lesion, either of the brain or spinal cord. By some authorities the paralysis is thought to be of peripheral rather than central origin, the term “myogenic paralysis” being applied to it. Under the

title myogenic, or essential paralysis, this affection is described by M. Bouchut,\* and, except in cases preceded by febrile convulsions, he regards it as a local affection, "accompanied by an alteration of the elementary tissue of the substance of the muscles." M. Bouchut considers it to depend most frequently upon exposure to cold, as from children wearing low dresses, being put to bed without warm night-dresses, throwing off the bed-clothes, &c. ; and observes that children under these circumstances, are, "most usually attacked with this paralysis, the nature of which is, according to my opinion, entirely rheumatic."

As this form of paralysis is seldom, if ever, a fatal disease, opportunities for making post-mortem examinations, in recent cases, must be extremely rare, and in those cases in which such examinations have been made at a late period, death having resulted from some other affection, when some atrophic changes have been observed in the portions of the spinal cord corresponding to the upper and lower extremities, these have been thought to be of a secondary character, and consequent upon, rather than producing the paralysis.

In one post-mortem examination which I had the opportunity of making, in the case of a child with paralysis of one leg, who died some years after the paralytic seizure, no changes appreciable to the naked eye could be detected, either in the brain or spinal cord. It is probable, however, that if a microscopical examination had been made, after the method adopted by Dr. Lockhart Clarke, of hardening the nerve substance in solutions of chromic acid, gradually increased in strength, and then staining with carmine the sections made, some important structural changes might have been detected.

In France and Germany infantile paralysis has of late years been the subject of careful examination, and Professor Charcot† in his recently published lectures "on diseases of the nervous system," has given the following account of the pathological changes observed. Under the head of lesions of motor nerve

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\* "Practical Treatise on the Diseases of Children." Translated by P. H. Bird. London. 1854.

† English translation by "The New Sydenham Society," p. 57. 1877.



cells, Charcot observes : "*Infantile spinal paralysis* is, up to the present, the most perfect type of the affections which compose this category. The numerous researches made recently in France, in reference to the spinal lesions on which they depend, concur to indicate, as an essential fact, the profound alteration of a large number of motor-cells, in those regions of the cord whence the nerves emanate which supply the paralysed muscles.\* In the vicinity of the atrophied cells, the connective network almost always offers manifest traces of an inflammatory process. Judging from the general aspect of the phenomena, we are induced to admit, as a highly probable hypothesis, that, in infantile spinal paralysis, a super-acute irritative action suddenly seizes on a large number of nerve-cells and makes them promptly lose their motor functions. Some cells which have been but slightly attacked will recover their functions some day, and this phase corresponds to the amelioration of symptoms which always supervenes at a certain period of the disease. Others, however, have been more severely involved, and the irritation of which they were the seat is transmitted along the nerves to the paralysed muscles which, in consequence, suffer trophic lesions of a more or less serious character.† However it be, it is known that diminution, or even loss of faradaic contractility may be observed in certain muscles, barely five or six days after the abrupt invasion of the first symptoms. The emaciation of the muscular mass makes rapid progress besides, and soon becomes evident. The alterations which, on histological examination, are found in the affected muscles are these : firstly, simple atrophy of the primitive fasciculi with the transverse striæ preserved ; and secondly, the marks of a more or less active proliferation of sarcolemma-nuclei on some isolated fasciculi. The accumulation of fat sometimes

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\* On atrophy of the motor nerve-cells in infantile paralysis, consult Prevost in "Comptes Rendus de la Société de Biologie," 1866, p. 215. Charcot et Jeffroy, "Cas de Paralyse Infantile Spinale, avec lesions des carnes anterieures de la substance grisé de la moelle epinière" in "Archives de Physiologie," p. 135, 1870, pls. vol. vi. Parrat et Jeffroy, id., p. 309. Vulpian, id., p. 316. H. Roger et Damaschino, "Recherches anatomique sur la Paralyse Spinale de l'enfance" in *Gazette Médicale*, Nos. 41, 43, et sino, 1870 (fig. 2).

† Charcot et Jeffroy, loc. cit.

seen in old cases, seems to be a purely adventitious phenomenon.”\*

In concluding these observations on the clinical history of cases with rigid, and those with flaccid muscles, I will briefly refer to the chief points of difference between the two classes of cases ; and also the points in which they are generally found to agree.

*Period and Mode of Seizure.*—1st. Cases of infantile paralysis with flaccid muscles never occur at, or immediately after, the period of birth—the time when the worst cases of paralysis with rigid muscles occur. With this exception, the two classes of cases agree as to the ordinary period of seizure being from six to eighteen months—during the first dentition ; but both also occur at later periods, as the result of various febrile disorders ; and both also frequently result from convulsive seizures. The flaccid class, however, are sometimes ushered in by a febrile attack, accompanied by an acute pain in the limbs, at first supposed to indicate an attack of rheumatic fever. Cases of this kind occur as late as five or seven years of age, but I have never known this condition precede an attack of paralysis with rigid muscles.

*Mental Faculties.*—2nd. In the cases of infantile paralysis with flaccid muscles, even in its worst form, the mental faculties are never in any way affected ; whilst in the cases with rigid muscles they are often seriously impaired.

*Muscles involved.*—3rd. Generally speaking, fewer muscles are involved in the flaccid than in the rigid class—single muscles, or groups of muscles, either in the leg or arm, are often involved in the flaccid class ; but all the muscles in the limb or limbs are generally involved in the rigid class.

*Temperature.*—4th. In the flaccid class the temperature of the paralysed limbs is always much lowered, and in severe cases the normal temperature cannot be restored and maintained by any means ; whilst in the rigid class the normal, or very nearly the normal, temperature is always maintained.

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\* Charcot et Jeffroy, loc. cit. Vulpian, loc. cit.

*Tendency to Recovery.*—5th. In the flaccid class there is always a tendency to spontaneous recovery—often perfect in slight cases, and to a considerable extent in the more severe. In the class of rigid muscles no tendency to improvement ever occurs.

*Fatty Degeneration in Muscles.*—6th. In the flaccid class, when the affection is too severe for recovery, there is always a tendency to fatty degeneration in the paralysed muscles; whilst in the class of rigid muscles no tendency to fatty degeneration ever exists.

*Tenotomy and Mechanical Extension.*—7th. In many cases belonging to the flaccid class, in which contractions and deformities of the limbs have resulted, tenotomy may be dispensed with when the contraction is of a moderate degree; and mechanical extension alone will be found sufficient to correct the deformity. But in the rigid class mechanical extension always fails, and tenotomy offers the only prospect of improvement. Contractions may, however, often be prevented, in both classes, by shampooing, and the daily use of passive exercises.

*Reunion of Tendons after Division.*—8th. After tenotomy, employed to remedy the persistent deformity in the class of flaccid muscles, the risk of feeble union is from defective reparative power, and not from a too wide separation of the extremities of the divided tendon, as in the class of rigid muscles in which there is no fear of defective nutrition. In both classes, however, good union will always be obtained if the surgeon regulates the extension after tenotomy with sufficient care.

*Galvanism.*—9th. Galvanism, especially the mild continuous current, is of the utmost value in the flaccid class, and as far as my experience goes it is of no use whatever in the rigid class; though Dr. Tibbits has recently found some good derived from galvanism of the sympathetic, in the rigid class.

*Relative frequency of Cases with Rigid and those with Flaccid Muscles.*—10th. With regard to the relative frequency of these two classes of cases, it is impossible to arrive at any conclusion from the statistical tables published by my late colleagues, Mr. Tamplin and Mr. Lonsdale, given in my work on "Club

Foot," 2nd edit. p. 108, in consequence of the different ways in which the cases have been recorded as belonging to the so-called spasmodic—*i.e.* rigid; or to the paralytic—*i.e.* flaccid class; but from my own observation I believe the cases of flaccid muscles to be much more numerous than the rigid class, and that the large number of cases of deformity in which the muscles are recorded as being in a healthy, or nearly healthy condition, were really examples of the flaccid class in which spontaneous recovery had taken place, although the transient paralysis laid the foundation of persistent deformity.

These are the chief points in which these two classes of cases either resemble or differ from each other, and taken together as a group under the term "Infantile Paralysis," their clinical history and pathology especially call for the most careful study and attention, with a view to their successful treatment, and prevention of the contractions and deformities which generally result from this affection.

## DIFFICULTY IN DIAGNOSIS DUE TO ROTATION OF OVARIAN TUMOURS.

By J. KNOWSLEY THORNTON,

Surgeon to the Samaritan Free Hospital for Women and Children.

THE fact that the differential diagnosis of an abdominal tumour may be rendered exceedingly difficult or impossible by the tumour being an ovarian one with a twisted pedicle, seems to have escaped the notice of the many writers on ovarian disease. The two following cases illustrate very well the difficulty of giving, not only a correct diagnosis, but also a correct prognosis in such cases:—

On Dec. 18th, 1876, E. A. B., aged twenty-four, single, came under my care at the Samaritan Hospital, during the absence of Mr. Spencer Wells, with the following history and condition:—

She was taken to see Mr. Spencer Wells on Nov. 10th, 1877, by Mr. Stevens of Hoddesdon, Herts, with a moderate-sized abdominal tumour. After a careful examination Mr. Wells expressed doubt as to the nature of the case, and requested to see her again in six weeks.



Mr. Stevens had first been called to see her in consequence of a sudden attack of pain in the right side just before her menstrual period. This first attack had occurred six months before she came under my care, and each returning period had brought a recurrence of the pain, which was sometimes so severe as to make her roll on the floor in agony. After the visit to Mr. Wells, Mr. Stevens wrote, and described another seizure, starting three days before the period and continuing for seven days, being only partially relieved by subcutaneous injections of morphia and a grain of opium every four hours. The pains on this occasion were so like commencing labour that Mr. Stevens examined per vaginam, and found a long virginal cervix, and the uterus unaffected by the paroxysms.

When she came under my observation she was a healthy looking girl, with full colour and no emaciation. She measured  $30\frac{1}{2}$  inches round the abdomen at the umbilical level,  $4\frac{1}{2}$  inches from the ensiform cartilage to the umbilicus, and 7 inches from the umbilicus to the pubes. There was a small moveable tumour occupying the right side of the abdomen and reaching to the umbilicus, and slightly across to the left of the linea alba. Its borders were overlapped by intestine all round. It could be felt to the right and in front of the uterus per vaginam, and appeared closely connected with it. The os and cervix were natural; the uterine cavity measured nearly  $3\frac{1}{2}$  inches. I could not feel certain as to fluctuation in the tumour, but I thought it did fluctuate. There was also a slight wave of ascitic fluid.

I kept her under observation during a period, but did not gain any fresh light as to the nature of the case. The pain was much less severe than at the former periods. Ascitic fluid now began to accumulate rapidly, and the patient, who had been in very good health, lost her appetite, got a yellow look, and complained of general malaise. I therefore determined to make an exploratory incision, and remove the tumour if it were found possible to do so. The period ceased on Jan. 20th, and on Jan. 24th, assisted by my colleagues, Dr. Bantock and Dr. Champneys (the latter administering bichloride of methylene), I made the incision usual in

ovariotomy to four inches. Six or seven pints of brownish ascitic fluid escaped on opening the peritoneum, and the tumour presented at the opening. It was of a dark liver colour, and had a firm sodden feeling, but evidently contained fluid. Some filmy adhesions to the intestines on the right side were ligatured with fine silk and divided. Firm adhesions to the appendix vermiformis, requiring three ligatures, were then dealt with. The tumour was tapped, and about a pint of thick tar-like fluid evacuated. The substance of the cyst was very friable, and broke away from the claws of the trocar. It was seized with Nélaton's forceps, the opening enlarged with scissors, and some inner cysts, with similar contents, broken up, and the tumour withdrawn. I then found a short, hard, and twisted pedicle on the right side of the uterus; it was untwisted, transfixed, and tied in two halves, and the tumour cut away. No trace of vessels could be seen in the pedicle, and I believe it might have been cut without hæmorrhage. The left ovary was found enlarged, and forming a grape-like bunch of small pediculated cysts. Its pedicle was secured in the same manner as the other, and it was removed. All the ligatures were of fine silk, and they were all cut off close to the knots and returned into the peritoneum, which was then thoroughly sponged out and the wound closed by fine silk sutures. The tumour weighed 1 lb. 12 oz., and there were seven pints of the mixed ascitic and cystic fluids. It was an ordinary multilocular one, and some of the small cysts which had not been broken contained pure dark fluid blood. A large patch of the main cyst wall was very thin, apparently from ulceration of a portion of the lining membrane, and so soft that the finger was easily pushed through it.

The patient made an excellent recovery, the highest temperature and pulse being noted exactly twenty-four hours after the operation— $99^{\circ}8$  and 104 respectively. The bowels acted after enema on the ninth day, and on the thirteenth day she was moved down into the convalescent ward, and on the twenty-sixth day after operation went to a convalescent home.

Slight metrostaxis came on five days after the operation, and continued four days.

I have heard of and from the patient frequently since ; she is very stout and strong, but suffers at times from hot flushes and headache. Menstruation is irregular ; but does occur from time to time with relief to the above symptoms.

The second case is similar but more perfect as an example of the subject, because I saw her before the twisting of the pedicle occurred in the first instance, or, at any rate, before any marked symptoms of the rotation were apparent.

M. M., aged thirty, single, came to see me in August, 1877, from Woolland in Dorsetshire. She had been under the care of Mr. Tarzowell, of Sturminster Newton, who had diagnosed an ovarian tumour.

I found a small ovarian cyst with very free fluctuation, and apparently free from any adhesions. By pelvic examination I could only just detect the tumour. She was a healthy-looking young woman with a full habit, and apparently not suffering in any way from the tumour, except that it prevented her stooping, and doing various things which her occupation of cook rendered necessary. The Samaritan Hospital was just closing for its autumn cleaning, and I was leaving town, and therefore advised her to come up again in October and have the tumour removed. On her return in October she was thinner, and not looking so well, and her skin had a yellowish hue.

*History.*—In August, 1876, first noticed a lump in the right side, about the size of a hen's egg ; it gradually enlarged, and in May, 1877, she began to suffer pain in the bowels, was feverish, and was in bed for two weeks. From this time the tumour gave her more trouble ; she often had pains in the abdomen and back, and suffered more than formerly at the menstrual periods. On her return home in August all her pains greatly increased, and from that time till she returned in October she suffered from constant pain in the back, with bearing down of the uterus, and stooping became impossible from the pain it caused in the abdomen.

On proceeding to examine her I was at once struck with the fact that though she had lost flesh and was, consequently, generally smaller, the tumour itself had evidently decreased in size. Proceeding to feel it I found it firmer, and no

longer so distinctly fluctuant; indeed, I was in doubt whether there was any fluctuation, it had to me much more the characters of a soft fibroid. Pelvic examination revealed no change, except that the tumour seemed much more closely connected with the uterus than I had thought. I was now inclined to regard it as a pediculated outgrowth from the uterus, but with my former impression fresh and strong in my mind was much puzzled. I asked Mr. Wells to see her with me, and he agreed that it was a doubtful case, and advised keeping her under observation. Others among my colleagues, who kindly saw her with me, declined to give a positive opinion; but the general leaning was evidently in favour of its being uterine—this view being encouraged by the general appearance of the patient, and the strong pigmentation of the linea alba.

I frankly acknowledged my doubts to her and kept her under observation till December 11th, when I decided, after fully explaining the nature of the operation, to make a small exploratory incision. She was both willing and anxious that I should do this as she was quite unable to earn her living, and I felt fully justified in proposing it, looking at the history of the case since it had been under my direct observation. I should mention that the tumour did not seem to have decidedly increased or decreased since October, but if there was any change it was in the latter direction. It appeared also to be as freely movable as ever in the abdomen.

On Dec. 13th Mr. Meredith gave bichloride of methylene, and, assisted by my colleagues, Dr. Bantock and Mr. Doran, I made a small incision in the usual situation. The hæmorrhage from the parietes was freer than I have ever seen it, and I was some time before I could open the peritoneum; when I did so I at once saw the familiar white, glistening surface of an ovarian tumour, and enlarged my incision to five inches; when more fully exposed the surface of the cyst was seen to have a mottled look, and, greatly to my surprise, was adherent in all directions to the parietes by firm films and bands which were very vascular; similar adhesions connected it with the omentum and intestines—many of these required ligature. The tumour felt so solid



that I attempted to remove it whole, but finding this impossible without unduly lengthening the incision, I tapped it and let out a quantity of thick, dark, grumous material ; drawing out the empty cyst I found a firm, fibrous twisted pedicle close to the right side of the uterus. I transfixed and ligatured it in two halves with medium silk ; when I cut away the cyst the vessels were seen to be plugged with partially decolorised clot. The other ovary was plump and healthy, the uterus normal, but pulled somewhat over to the right, and somewhat out of shape. The very free hæmorrhage in cutting through the parietes was explained by the fact that the chief blood supply of the tumour was received through its parietal adhesions. It is very remarkable how very freely the tumour could be moved about in the abdomen when we consider the extent of the adhesions. A good deal of sponging of peritoneum was required, and I should have put in a glass drainage tube, but having performed the operation under the carbolised steam spray and in every detail with the strictest antiseptic precautions, I did not think it necessary, feeling sure that any blood or serum which oozed after the peritoneum was closed would soon be reabsorbed. The tumour resembled very closely the one I have already described, except that it was not so completely dead ; its vitality having been better maintained by the extensive vascular adhesions. A very large portion of the cyst wall was thinned and softened as in the former tumour, and I wonder it did not give way during my efforts to extract it whole.

The peculiar mottled appearance of the external surface of the cyst was similar to that I have noted in a case described by me in the twenty-seventh volume of the "Transactions of the Pathological Society," though not so marked as in that case, where the cyst was entirely dead and gangrenous.

The patient made a good recovery, but at 11 P.M. on the night of the operation her temperature rose to  $101^{\circ}4$ , and the ice-water cap was put on, a precaution I have rarely found necessary since I commenced antiseptic ovariectomy. She was troubled with sickness for two days, and was a very difficult patient to feed ; the only things she would eat at

any time being boiled rice, green vegetables, and a little fish.

All the sutures were removed under the spray on the seventh day, two days later than usual, owing to my having to go out of town ; the wound healed entirely by first intention. After the third day the temperature was never over  $99^{\circ}\text{O}$ , and usually normal pulse, 72 to 80. Bowels acted naturally for first time on thirteenth day. I did not think it necessary to have them opened by enema as she took so little food. She got up on the same day, and went to the convalescent home on the twentieth day after the operation. These cases teach their own lesson so well that it may seem unnecessary for me to point out the features of special interest, and I will therefore only briefly summarise them.

The difficulty in each was to decide whether one had to deal with an ovarian tumour or some other. In both cases the uterine outgrowth seemed to me most probable as an alternative, extra-uterine foetation being also suggested in the first case. In both cases the pain at the periods referred chiefly to the side on which the tumour was situated and to the back, was a marked symptom, though much more severe in the first, and this also pointed to uterine rather than ovarian disease.

In both, the twisting of the pedicle shortened the connexion between the tumour and uterus, and increased the likeness to a pediculated outgrowth.

In both, the stoppage of blood supply, though in different degree, led to decrease in size, with corresponding solidification of the tumours.

In both, extreme congestion, with large extravasation of blood into the tumours, seems to have preceded the complete obstruction to the circulation. The reason for this, as I have pointed out in the paper in the *Pathological Transactions* already referred to, is to be found in the thin walls and large size of the veins with the thick muscular coats of the arteries in ovarian tumours. Doubtless the increase of pain at the periods was due to the increased vascularity with proportionate congestion. In both a certain jaundiced appearance was observed, due, as I believe, to the reabsorption

of the colouring matter of the blood. I have seen it more than once in patients with large hæmatocèles which have been left to nature.

In the first case the whole tumour was practically dead and non-vascular, only small portions of its peritoneal coat near the adhesions showing any trace of vascularity, and it affords us a beautiful example of the harmless nature of dead tissue, provided it is guarded from all sources of external contamination—an example accentuated for those who will carefully study the subject by a comparison with the course of events in the case I have already alluded to, where strangulation of the tumour took place after the causes of putrefaction had been introduced into the tumour from without. I have met with another case which illustrates this, and those who are interested in this side of the subject of rotation of ovarian tumours will find some remarks on it in a paper published by myself in the *Medical Times and Gazette*, July 28, 1877, in which brief notes of the first of these cases are also given. It only remains to point out that though we know, on the evidence of post-mortem observations, that ovarian tumours have withered and become harmless from their blood supply having been cut off, we know nothing of the history of these cases; and looking to the condition of the tumours in my cases as seen after removal, I think they were in both happily removed when they were. Had either of them, from gradually softening or from some sudden external agency, ruptured and poured its contents into the peritoneum, the results would have been almost certainly disastrous. Such a termination might have occurred had one regarded them as fibroid outgrowths and given a favourable prognosis. In similar cases, I believe, the wise course is to make an exploratory incision, as it is impossible, without its aid, to give either a correct diagnosis or prognosis. I am much more inclined to advocate this course now I have tested the value of the antiseptic system in abdominal section. I believe, if carefully and strictly performed by Professor Lister's method, very little, if any, danger attaches to an exploratory incision, *provided* no previous puncture or tapping has been made to introduce causes of putrefaction into the cyst.

## Notices and Reviews of Books.

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*Diseases of Women.* By Lawson Tait, F.R.C.S.

Williams & Norgate. 1877. Pp. 310.

WHILST the student has had an ample choice of excellent and comprehensive works on the Diseases of Women, there has been hitherto rather a lack of condensed and yet sufficiently inclusive manuals on this subject. In future, however, including works already published, and others announced, there is likely to be no deficiency, at any rate, in numbers to select from. The book before us, though of much interest to the practitioner, and still more to the specialist, will scarcely suffice for the student's need, for it is rather a record of the author's studies, and of his special views, than a comprehensive picture of the present state of gynæcological science. As the product of wide experience in the more surgical side of gynæcology it is of great value, and, as might be expected, its teachings are illustrated by unusual and most apt cases, such as but few persons have the good fortune to meet with.

A considerable and valuable portion of the book consists of an enlargement of the author's Hastings' Essay of 1873 on Diseases of the Ovary, which will not now call for special notice. The arrangement of the book strictly follows the order of anatomy, a plan which has an apparent simplicity, but is often inconsistent with clinical relations, and leads to practical inconvenience; as, for instance, when eruptions of the mons veneris are separated from similar eruptions affecting the labia majora, or other parts of the vulva. Eruptions are, in general, well described; and, as might be expected from the author's surgical experience, this is especially the case with syphilitic and other venereal affections.

Among affections of the nymphæ is noted one not hitherto distinctly described, which, according to the author, is the real disease existing in a large number of cases of so-called vaginismus, a term widely used as a cloak to cover ignorance and carelessness. It occurs at or after the climacteric, and consists of the appearance of one or two exquisitely tender



purplish spots on the mucous surface of the nymphæ, which, if watched for a long time, are found to be transitory and spreading. The author, by microscopic examination of a fragment of membrane removed in one case, has discovered that the pathological condition is atrophy of all the tissues except capillaries and nerves, which thus lie almost unprotected. For deficiency of sexual erethism, with atrophy of the clitoris, the application of the continuous current to that organ is recommended, by means of a small apparatus to be worn at the parts. For the closure of vesico-vaginal fistulæ the author prefers silver wire, and he speaks with the highest laudation of the use of the variable tubular needle for passing the sutures. On this point we think that the opinion of the majority of surgeons will agree rather with that of Professor Thomas, who speaks of tubular needles as at once the most ingenious and the most worthless appliances which can be employed. Mr. Tait, relying, as usual, on his own experience alone, is severe upon the use of the term vaginismus by other authors, and declares that, although cases of true vaginismus may occur, they are as yet quite unknown to him. He seems to have been specially unfortunate in his experience of the result of dilatation of the urethra for the purpose of examining, or removing foreign substances from, the bladder ; to have seen three instances in which permanent incontinence was thus produced, one of which occurred in his own practice, and having found every effort fail to effect a cure of this condition. He is disposed to conclude that an aperture made in the neck of the bladder and closed immediately is a much better and safer practice.

In endometritis of the cervix, the use of solid nitrate of silver is strongly denounced, and a saturated solution of acetate of lead in glycerine, applied on a plug of cotton wool, pronounced the best remedy. Granular erosions of the os appear to yield readily to treatment in Mr. Tait's patients, for he finds that, in the majority of cases, a simple astringent lotion speedily cures them. As to the pathology of uterine cancer, the author believes that every case is of epithelial origin, the only difference being that, in the most common or infiltrating form, the epithelial proliferation begins in the

mucous crypts, and spreads inwards : while in the rarer form, or cauliflower excrescence, of which he has only met with four examples, it extends outwards, and becomes papillary. The mere presence of scirrhus masses he regards as no proof of that form being the primary one, holding that it is found secondary to epitheliomatous changes elsewhere. In speaking of the effect of bromide of potassium upon subinvolution of the uterus, the author adopts the view of Professor Binz, that the benefit is derived from the potash, and not, as generally supposed, from the bromine. He finds chlorate of potash quite as efficacious, and considers that the other salts would be equally so if they could be administered as conveniently. This conclusion appears scarcely consistent with the beneficial influence of hydrobromic acid in engorgement of the uterus, of which most gynæcologists have now had experience. With regard to the pathology of membranous dysmenorrhœa, or, as he prefers to call it, membranous endometritis, the author adopts a view very different to that now accepted by the best authorities. He has never seen an instance of the affection in a virginal patient, although it has now been abundantly established that it may occur in virgins. He appears to hold the view which is now generally regarded as an exploded one, that most instances of expulsion of a membrane are cases of menstrual miscarriage of a peculiar kind, probably due, most frequently, to incomplete sterility on the part of the husband. This opinion is based chiefly upon the case of a lady who for nearly twelve years usually passed shreds of membrane at the periods, having the structure of uterine mucous membrane, while on one occasion Mr. Tait found on the internal surface a little pediculated button of white substance, which, he says, was undoubtedly an arrested embryo.

While the best part of the book is that which describes the more purely surgical diseases of women, the author will be thought, by many, to have either had a small experience of the more ordinary cases seen in gynæcological practice, or to have used little discrimination in observing them. He has only twice found a marked retroflexion in a virgin, and has never seen an instance of misplacement of the uterus

forward requiring interference in a woman who had been pregnant. Generally, the account given of displacements and their mechanical treatment is most meagre. For the treatment of prolapse of the uterus and vagina the only pessaries mentioned are a spherical vulcanite ball, a hard ring, a hollow rubber ring padded with hair, and Simpson's shelf pessary, though the last is admitted to involve much risk of producing ulceration. For retroversion or retroflexion Simpson's original ring pessary, of copper wire covered with india-rubber, a material far inferior in cleanliness to vulcanite or metal, is alone recommended. In this part of the subject the student would especially feel the want of any illustrations, which the author has refrained from introducing, on the ground that they would have greatly enhanced the cost of the book without giving a corresponding increase to its value.

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*Practical Gynæcology. A Handbook of the Diseases of Women.*

By Heywood Smith, M.A., M.D., Oxon. London : J. and A. Churchill. 1877. Pp. 184.

OF this book it cannot be said that it does not aim at being comprehensive, or that there is any want of system in its arrangement. The diseases are arranged on the basis of the nomenclature of the Royal College of Physicians, and under each heading are paragraphs, which readily catch the eye, severally for definition, causes, symptoms, signs, diagnosis, prognosis, and treatment. But to treat in any satisfactory manner not only of the whole of gynæcology, including diseases of the mamma, but of most of the subjects included in works on obstetrics—such as the morbid states associated with pregnancy or parturition, and consequent upon parturition—within the compass of 165 small pages, appears to us to be an impossible task, and we think it is to be regretted that the author should have attempted it. In many cases even a part of the small space available is uselessly occupied by that devoted to the heading of definition, which is sometimes only a paraphrase of the title, or conveys no further information. Thus, stricture of the oviduct is defined as narrowing of some

portion of the duct, stricture of the internal os uteri as narrowness of the inner os, atrophy of the uterus as abnormal smallness, œdema of the vulva as anasarca in the connective tissue of the labium majus, sterility as barrenness, and so forth.

The following, as a definition of hysteria, will scarcely make plain a difficult subject :—

“ A disease of the nervous system (mind ?) (rare in males) ; a perversion of nervous energy characterised by neuromimesis.”

Again, it is a necessary result of extreme brevity that the paragraph on treatment is in many cases merely a tabulation of remedies which may be used, without any attempt to discuss their relative value, or the circumstances under which they are severally to be recommended. For instance, on the treatment of that very common affection, granular inflammation of the lips of the uterus, we have the following paragraph :—

“ *Treatment.*—If complicated with areolar hyperplasia (p. 74), free scarification, repeated, if necessary, several times at intervals of about a week ; afterwards the application of fuming nitric acid, or pernitrate of mercury (p. 169, 5, *a*), iodine, potassa caustica lightly ; the actual cautery, Richardson’s styptic colloid (tannin dissolved in collodion), chromic acid (p. 169, 5, *b*), strong solution of iron, solid nitrate of silver (?), vaginal injections of glycerine and sulphate of zinc (p. 168, 3, *f*), acetate of lead or tannin (p. 168, 3, *i*), pessaries of oxide of zinc, iodide of lead with belladonna (p. 168, 2, *b*), or opium. Caustics should not be applied too frequently. If the granulations project considerably they may be removed with scissors. If the lips of the cervix are split and widely divergent (everted), the sides of the fissure may be pared, and the edges brought together with sutures.”

Again, with respect to hypertrophic elongation of the vaginal or supra-vaginal cervix, its causation, varieties, its relations to prolapse of the uterus, vagina, and pelvic viscera, and the various operative measures possible for its relief, the following is the sole information vouchsafed to general practitioners as a means of helping them to a more accurate diagnosis and treatment—the aim which the author specifies in his preface :—

“ **HYPERTROPHY OF THE CERVIX** (*elongation*). *Definition.*—Elongation of the cervix not associated with morbid deposit. *Causes.*—



Congenital ; continued exertion, as by sewing machine with treadle. *Symptoms*.—Backache ; occasionally dysmenorrhœa from associated stricture of either os ; sterility ; sometimes none. *Signs*.—Cervix is found to be longer than normal, and conical ; tendency to prolapsus. *Diagnosis*.—By signs as above, and absence of history of disease of the part. *Prognosis*.—Favourable. *Treatment*.—Amputation,

The important subjects of areolar hyperplasia, and of dislocations and distortions of the uterus, are treated as successfully as the space will allow, and some useful formulæ are contained in an appendix ; but we cannot think that the book, as a whole, is worthy of its author.

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## Abstracts of Societies' Proceedings.

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### OBSTETRICAL SOCIETY OF LONDON.

*Meeting, Jan. 2nd, 1878.*

Dr. CHARLES WEST, *President, in the Chair.*

Dr. ROPER showed a specimen of ruptured uterus. The patient was thirty-six years old. She had previously had seven children, of whom five were still-born, and the other two only lived a few hours. She was attended by a midwife. As the pains appeared feeble, a dose of ergot was given when the os uteri was fully dilated, and the head nearly on the perineum. An hour and a half afterwards symptoms of rupture appeared, and the child receded into the peritoneal cavity. It was extracted by podalic version, and the woman died seven hours afterwards. The laceration began at the cervix, and extended far into the right broad ligament.

Dr. J. WILLIAMS had once seen a similar case, in which rupture occurred spontaneously, no ergot having been given. Labour was very rapid, and the child was born before the attendant arrived. The woman died two hours after delivery, and rupture was found extending up into the body of the uterus. There was hæmorrhage into the broad ligament, and round the uterus posteriorly reaching to the opposite side. The wall of the uterus was two inches thick.

Dr. HERMAN showed the uterus of a woman who had died of post-partum hæmorrhage. The medical attendant had injected the organ with perchloride of iron : one part of the strong solution to four of water. After awhile the hæmorrhage again recurred, and a rag soaked in the undiluted strong solution was then pushed up into the uterus. The specimen showed well the difference in the effect of the weaker and the saturated solution. The upper part of the organ which had been bathed by the weaker solution was, on section,

unaltered to an extent appreciable by the naked eye, though it was ascertained by chemical tests that the iron had come in contact with it. The lower part of the uterus, reached by the saturated solution, was black, hard, and corrugated. This change extended through the inner three-fourths of its thickness, and a good deal of sloughing must have occurred had the patient survived.

Dr. BRAXTON HICKS said that this agreed with what we knew of the effect of perchloride of iron on the vagina. Exfoliation was produced if anything stronger than the weak solution were applied. He thought it very confusing to have two solutions of different strength in the Pharmacopœia.

Dr. CLEVELAND said that the strong solution was a perfect escharotic. He had used it diluted with three parts of water, and found this effective.

Dr. EDIS referred to a case which he had seen some years ago. Bleeding occurred three weeks after delivery, and no retained placenta could be found after dilatation of the cervix. Shortly after labour one part of the strong solution of iron with four of water had been injected, without permanently arresting the hæmorrhage. The patient became nearly moribund, the temperature ranging between 100° and 104°. After partial cessation of bleeding, a week or ten days later, she sat up, and hæmorrhage recurred. A second exploration was fruitless and oozing went on another ten days. As a *dernier ressort* two drachms of the strong liquor ferri perchloridi were injected, and a plug of cotton-wool inserted to keep it in. From that time she had no bad symptoms. No sloughing took place, although there was much black discharge, and her convalescence was tedious. Some months after there was nothing abnormal.

Dr. ROUTH said that this case called for a consideration of the whole question, whether we should inject the uterus with iron or not. There seemed a direct contradiction between Dr. Edis and Dr. Cleveland. In two cases he had used the strong solution with four parts of water. Both patients died—one from septicæmia, one from recurrent hæmorrhage. Dr. Savage first laid down that the cervix should always be well dilated before injecting, so as to diminish the risk of regurgitation through the Fallopian tubes. There was always some risk of this ; and he thought it safer to tie a sponge or cotton-wool to a stick, and so swab. In the present case the strong solution had evidently not been applied high enough. It would have done no harm if a little sloughing had occurred. The vessels would have been constricted, and absorption prevented. In a future case he would use a swab with the undiluted solution, thinking it safer than a weaker one.

Dr. CORY said that the injection of perchloride of iron had been used over forty times in the Charity of St. Thomas's. No death had followed its use, and scarcely ever any bad symptoms. One part of the strong solution to four was used, and the hand was introduced to pass the tube of Higginson's syringe up to the fundus.

Dr. HAYES said that in the specimen the larger part of the uterus seemed not to have been touched at all. Unless the whole surface were bathed, the plan was useless. In injecting, the hand should always be introduced—first, to remove clots, secondly, to carry the tube up to the fundus. It was improper simply to pass the tube through the cervix. He had used the plan in at least six cases. In one only the nozzle of the tube was introduced, and the hæmorrhage did not cease. The patient died, but not from the effect of the iron. In the second case, the woman also died, but this was from exhaustion after difficult labour. In the other four no bad results had followed. He had used the iron as strong as one part of the strong solution with an equal part of water.

Dr. BARNES said that he had had a good deal of experience on both points. The hand should be passed in up to the fundus, to carry up the tube, and also ascertain whether any placenta or clots were there. If so, these should be removed first. He generally recommended the strength of one in four as a moderate one, but a stronger solution might be used. He thought a rather strong solution, within moderate limits, safer, since the effect was more immediate. Sloughing had followed from the concentrated solution, but it was not necessarily fatal. Latterly he had had a large tube made with numerous holes, which was packed with a sponge, and the solution then expressed by a piston. But there was a use in the shock of sudden injection, which might induce uterine contraction. There was risk of the fluid passing along the Fallopian tubes, if the exit were not free. The method had now stood the test of criticism, both fair and unfair. Tincture of iodine, as used in America, might perhaps be safer in some cases. For years he had used the iron with a strong feeling of responsibility, but its value was now well assured. It should not be reserved till the case was desperate, but employed as soon as reflex excitability was lost.

Dr. HEYWOOD SMITH showed a specimen from a case of extra-uterine foetation. He gave a short account of the case, an abstract of which appeared in the *OBSTETRICAL JOURNAL* for November, 1817, p. 553. The placenta, which was wounded in the operation, was spread out over the anterior surface of the sac, and he believed that it was implanted in the fimbriæ of the Fallopian tube. He thought that this must always be the case in instances of supposed primary abdominal foetation.

The specimen was referred to Dr. Madge and Dr. Aveling for report.

Dr. HEYWOOD SMITH also showed a specimen of carcinoma of the body of the uterus. The patient was fifty years old. She had suffered from severe hæmorrhage for two years. In October, 1875, the uterus was found to be anteflexed and small, the os small, and cervix conical. She had had slight hæmorrhage since 1870. In March, 1876, there was a tender spot in the hypogastrium. In July the uterus was found enlarged and hard, but still movable: the sound

passed  $3\frac{1}{2}$  inches. She was admitted into hospital in September, 1877, and was then getting rapidly thinner. He divided the cervix, for the sake of diagnosis between carcinoma and fibroid. A hard lobulated, somewhat friable mass, was felt within, and strong carbolic acid was applied to it. A sanious watery discharge continued, and she died in November. The whole of the uterus, except the cervix, was involved in the disease. There was a perforation at the upper part into a space limited by adhesions, communicating with the intestine.

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The PRESIDENT then delivered the following Address :—

GENTLEMEN,—It seems a small undertaking, a very easy, simple matter, to sum up at the end of a year the results of the work of a scientific society, to do honour to the memories of those of our fellow-labourers who have passed from among us, and to encourage one another by their example. And yet when one attempts the task the difficulties in the way of its performance are found to be very great : for there are in it no elements of novelty ; and what is there to say which has not been said, and better said, before ? Nor only so, but how small after all is the outcome of a year of the most earnest work of any society, and especially of a society like this, whose scope is but a limited one. The history, too, the uneventful history of members of our profession, of lives passed in quiet toil, in the patient quest of knowledge, in self-denying kindness, and in the practice of those homely virtues which alone it falls to most of us to have the opportunity of exercising, is one which we can scarcely bring into the full glare of publicity. We run great risk, in doing it, of distorting the familiar features of those whose memories we fain would cherish ; of reflecting them as some mirrors do, magnified indeed, but misproportioned.

Pardon me if I seem to regard my office as a humbler one than some would represent it. I know full well that it is beyond my skill to discharge it fittingly ; and I trust you will not think that I seek to extenuate my own shortcomings by detracting from the interest or the importance of the subjects with which I have to deal.

The first duty that devolves on me, indeed, is one as pleasant as it is easy—to congratulate you on the increase of your numbers, and on the general prosperity of the Society. The number of our members is 738, as against 700 last year ; and though numbers go to prove only that a society is popular, there yet is no surer proof of the decay of an association than when members secede from it without cause assigned, or when candidates do not come forward to fill the vacancies which time makes in its ranks. Neither of these signs of decline appears, and, I trust, will never show itself in the Obstetrical Society. Increasing numbers mean increase of income ; and it is needless to do more than call your attention to the satisfactory report of your Treasurer. You have heard, too, from your Honorary Librarian, that



your collection of books (a good and well-chosen one it is) increases steadily; and it has been my pleasing duty to return, on behalf of the Council, and of you, gentlemen, our best thanks for fresh gifts of books and casts from our Honorary President, handing over to his juniors the instruments which helped him to his extended usefulness and well-merited fame.

The nineteenth volume of your "Transactions" will, I trust, be found not inferior in value to its predecessors. For my own part, while I have learned much from the papers and discussions, and have refreshed my, on many points, somewhat obsolete knowledge, I have not seen without a strong feeling that, for the full efficiency of your President, it is needed that his knowledge should be as complete and as recent as that of the youngest member of your body. For the courtesy and kindness with which you have borne with my shortcomings, let me here return you my most heartfelt thanks.

Our meetings have never lacked a good attendance, nor have the discussions been wanting in interest. It has seemed, however, to the Council due both to those gentlemen who are so good as to contribute papers to the Society, as well as to the President and Secretaries, that the law should define more clearly than has hitherto been done the mode of proceeding when any doubt may arise as to whether the novelty or interest of a communication renders it desirable that it should be brought before the Society. The object of the changes proposed is to throw the burden of a decision more upon the Council at large, and to remove it as far as may be from the President and Secretaries, so that the bare suspicion of personal feeling being mixed up in the question of the acceptance or rejection of a paper shall be impossible. The laws thus modified have been approved by the Council, but it was thought wise, as one or two other rules may require amendment, not to trouble you with piecemeal legislation, but to let the matter stand over for a year.

You will be asked to vote the continuance of the two committees, the one of which has done good service in the collection of casts and drawings of various forms of distorted pelves, and in some instances of pelves themselves; and the other is engaged in the investigation of the important subject of transfusion. The labours of the Transfusion Committee have been impeded by the laws which impose difficulties in the way of experiments on animals for the benefit of man. According to some good people, the dominion which the Book of Genesis says was given to man "over every living thing that moveth upon the earth" was a very limited monarchy indeed. The work of the Temperature Committee was found almost impossible to be carried out except in a lying-in hospital. It is therefore not proposed to reconstitute that committee, but to leave the further elucidation of the problems with which it occupied itself to individual research.

It is not often that our medical societies become directly interested in legislative questions. The importance, however, of urging on the Government the adoption of some plan for securing that the women

who practise as midwives among the poor shall be really competent to the duty which they undertake, has, as you know, engaged much of the time and thoughts of several of your past Presidents; and to the accomplishment of this object one of our number, Dr. Aveling, has devoted himself with an unwearied zeal, without which our progress towards this most desirable end would have been very small.

I need not say that the question of the expediency or in expediency of women engaging in the practice of medicine generally is not at all involved in this action of the Society. Strongly advocated by some, it is as strongly deprecated by others, and it is not for me here to offer an opinion about it one way or the other. But we cannot abstain from taking up the subject, when we find that there is a body of several thousand women to whom the poor of this country have to look for attendance in their confinements, and that the bulk of these women have absolutely no education to fit them for their duties, and have advanced little, if at all, in intelligence during the past hundred years.

A committee was formed to draw up the details of a scheme which should provide for all midwives receiving, as they do in every continental country, a certain minimum of general and special education, and for their passing a very simple examination, which aims at little more than the exclusion of crass ignorance. The doing this should entitle them to be registered; and this registration should alone convey the right to obtain parochial or other public appointments. His Grace the Lord President of the Council expressed himself as favourable to the principles which the scheme embodies. It was afterwards laid before the Medical Council, who approved its object. In order to correct various legal and technical imperfections, it was submitted to Mr. Roscoe, the legal adviser of the College of Physicians; and the scheme, which has been drawn up by the Council with your sanction, will, it is hoped, be found such as can, notwithstanding some criticisms which have been passed upon it, be fairly carried into practice.

I may add that it does not appear to me at all desirable to substitute for the proposed plan of various examining boards, and various registration districts throughout the country, any scheme which would imply the formation of one central board for examination and registration under the control of the Local Government Board; nor do I advise its indefinite postponement till either the details of county organisation are improved, or till the much-vexed question of the general admission of women to practice in the higher departments of medicine has been settled.

The need is an urgent one. If it is to be met at all, it must be in such a way as to entail on the midwives no larger outlay than such as poor women whose rate of pay in England does not exceed five or six shillings a case can be expected to meet. A costly education, a stringent examination in the higher branches of the obstetric art, a

journey to the metropolis, or to one of three or four large towns, would entirely exceed the measure of their resources. Our object is simply to provide a class of nurses who to the ordinary knowledge of nursing superadd that of the attendance on women in natural labour. If the portals of all the medical examining bodies were thrown open to women to-morrow—nay, if in some ladies' parliament men were voted to be disqualified for the practice of medicine and surgery, and none but women were allowed to exercise it, the case of the village midwife would still remain unprovided for and the poor unprotected, just as they are now. An imperfect remedy of an admitted evil speedily applied is much to be preferred to a far-distant one, which promises, when realised, to be more complete. I trust that the Society will not allow itself to be turned aside by questions wholly foreign to the subject which we have in view, but that all its members will persevere in the endeavour which concerns us, not as doctors, but simply as citizens, striving to supply a great social want—to secure some guarantee that the poor shall not continue to be exposed to an ignorance and unskilfulness against which the government of every other civilised country has protected them.

Copies of the proposed scheme are, I think, in the hands of most of the Fellows present. The Secretaries will supply copies to any one who asks for them.

And here ends the strict business of the meeting. But it still remains for me to make mention of those who were with us this day last year; or, at least, were members of our Society then, and are not now. How best to do this is a problem which I do not well know how to solve. A dull catalogue of the day of birth, the day of death, the appointments held, the works written, would yield but little interest or profit—a mere colourless outline, in which it would be hard to recognise the once familiar features. To overlay the dead with praise would answer no better end; and the gilded statue of one so noble, wise, and good as the late Prince Consort seems placed as a material warning against so grave an error. I will try to be an honest chronicler, and to say of our lost friends what they who dwell now in a land where there are no false seemings would, if they revisited us, wish said of themselves.

The first whose loss we have to deplore is one who, in professional standing and in wide reputation, stood pre-eminent. You anticipate the name of Sir W. Fergusson, who was one of the original members of this Society, and took a prominent part at the meeting when it was founded. He recognised then the close connexion which subsists between surgery and obstetrics, and endorsed his opinion when he accepted the vice-presidency of the Society. I do not give up the hope that our friends at the College of Surgeons may lay this to heart, and that I may live to see some obstetrician occupying their presidential chair. It would honour them as it would honour us, and I am sure would do much good to every branch of medicine and surgery. But medical politics do not concern us here.



What Sir William Fergusson was as a surgeon it is not for me to say. I prefer to take a few sentences from the affectionate notice of him by Sir James Paget, in his address to the Medico-Chirurgical Society in March; and if it is true that *laudari à laudato* is the highest honour which a man can attain to, the surgeon whom Sir James Paget praises may be considered fortunate indeed:—

“He was the chief practical surgeon of his time, most eminent in his great practical ability as an operator. His plans for an operation were well designed, his apparatus was always complete and in its place; every appliance was as nearly as may be perfect. But it would be a shame to Fergusson, and good sense, and good surgery, to say that he owed nearly all his success to his excellence in operating. It gained him his first reputation; the second he owed to the publication of his ‘System of Practical Surgery;’ and when these drew on him attention, he was found to be good in a wide range of professional knowledge, and very charming in his personal character. His oral teaching was less effective than his writings; they speak clearly and vigorously. In many and important cases he was quick and clear in diagnosis; he saw into them at once, and without analysis, or weighing of evidence, formed a just opinion.”

So far, Sir James Paget, whose words I have taken the liberty of condensing, though without in any respect changing them. The last characteristic which he mentions—of quick, clear diagnosis—struck me much on the occasions when I met Sir William Fergusson in consultation. It appeared to me to be the result of vast experience and of a very tenacious memory—as if his head were stored with a collection of precedents, which every year and every day increased. When these failed him, he appeared to less advantage; but to say this is only to say that, while he had many gifts, he had not all—that the bedside was his proper place, not the lecture-room nor the council-chamber. This, however, is but small abatement from merit which in other respects was of the very highest order. Add to his reputation as a surgeon, and the success which he attained among the public, the fact that success did not spoil him; that strife did not sour his temper; that he was gentle, kindly, genial, hospitable; that he so avoided speaking ill of others that it came to pass that no one had an ill word to say of him; that he never made an enemy, or lost a friend; and that when he died, at the age of well-nigh threescore and ten, his death was felt to be premature, his loss a public misfortune and a private sorrow; and this, the simple truth, is of itself a praise beside which all other eulogy seems tame.

I do not know whether it is necessary to add that he was born on March 20, 1808, at Prestonpans, in Scotland; that he began the study of medicine in 1825, and worked so well, that at the age of twenty he was appointed, by Dr. Knox, of Edinburgh, Demonstrator of Anatomy to a class of 400 students. In 1828 he became a Member, and in 1831 a Fellow, of the College of Surgeons of Edinburgh; and in 1836, after holding various minor appointments, he was elected



Surgeon to the Royal Infirmary of that city. In 1840 he came to London to fill the chair of Professor of Surgery at King's College, and the post of Surgeon to the Hospital; and between that time and his death, on February 10, 1877, he had filled with reputation almost every post which a member of the medical profession could hold, and had received every honour to which he could aspire.

Another of our original Fellows died on January 6, 1877—one whose face was well known in these rooms, and whose voice was often heard in our discussions, pointing out a fallacy in argument, or questioning the exact accuracy of a statement; sometimes perhaps, in eagerness for victory, losing sight of a something of more value still.

Dr. Snow Beck, M.D., of London, a Member of the Royal College of Physicians, a Fellow of the Royal College of Surgeons, and a Fellow of the Royal Society, was born at Newcastle about the year 1814, became a pupil of Mr. Baird, Senior Surgeon to the Newcastle Infirmary; entered at University College in 1836, and, after taking the membership of the College of Surgeons in 1839, went abroad for two years. In 1841 he returned to London, and engaged in general practice. He worked also with much diligence at the Strand Union Workhouse, of which, I believe, he was at one time the medical officer. It was here that accident placed in his hands a gravid uterus, with the dissection of the nerves of which he occupied himself; attention having been already drawn to the subject by the researches of Dr. Robert Lee. It would answer no end to revive, after the lapse of more than thirty years, the details of an acrimonious dispute concerning the correctness of the observations of two gentlemen, of whom the one believed that the nerve-substance grew largely during pregnancy; the other, with equal good faith, contended that a fallacy lay at the root of that belief, and that the supposed nerves were, to a large extent, mere bands of cellular tissue, which Dr. Lee's imagination converted into nerves. Dr. Beck's observations were believed by the Council of the Royal Society to be the more accurate, and they adjudged to him, in 1845, the gold medal of that distinguished body, into the Fellowship of which he was afterwards elected.

His subsequent work was chiefly in the direction of practical subjects. I have read his essays on "Functional Diseases of the Uterus," published in the *London Medical Journal* for 1851; his paper on "Inflammation of the Vagina," as well as his essay on "Puerperal Fever," in the *British Medical Journal* for 1866; and his remarks on different occasions during the discussions in this Society. They all impress me with the conviction that his abilities were above the average; that he observed patiently, and reflected thoughtfully; that he was fitted in many respects to have done more than he ever accomplished.

And why this comparative failure? Why did the great distinction of his life become to him like that fruit fabled to grow on the Dead

Sea shore—fair outside, ashes and bitterness within? The answer is not far to seek. The honours which he gained so early were dearly bought at the price paid for them ; the strife in which they involved him, the self-assertion which that strife forced upon him, spoilt him for the mental discipline which might have won for him that higher place as a scientific investigator, that warm one as a cherished friend which a man covets none the less because he may haply miss the way that would have led to them. There are things better worth striving for, believe me, than success.

I have not taken the names of our deceased Fellows quite in their order, for the second who died was one of whom I have been unable to gather any particulars—Mr. Frederick Martin Rickard, M.R.C.S. and L.S.A., 1865-66, Assistant-Surgeon 25th Madras Native Infantry, who died at Kurnool in India on January 8, 1877. He died at the post of duty, far away from home, justifying the motto of the Society to which he belonged, as do many of our Fellows—“*Opifer per Orbem.*”

Three more names complete my chronicle. The first, one which these few words of mine may perhaps save from oblivion beyond the limits of his own country town, where his memory is cherished, and where I am glad to know that his son is winning for himself in the same profession the affection with which his father was regarded.

Charles Welchman, M.R.C.S. 1845, practised at Lichfield, where he died from paralysis at the age of fifty-four, on April 14, 1877. His townsman, Dr. William Browne, has been so good as to give me a few particulars about him, which differ but little from histories with which we are so familiar, that change but the name and it would do for many another one. Educated at Birmingham, which he left with the reputation that no one knew his work better, or was more dexterous as an operator, he settled at Lichfield, married and had to contend with all the pecuniary difficulties which a rapidly increasing family brought upon him. As time wore on, these difficulties preyed on his spirits and interfered with his success, though they did not lose him the confidence and well-deserved affection of his patients. Of this no better proof can be given than the fact that the officers of the yeomanry regiment to which he belonged subscribed to a testimonial which must have been worth much more to him than the purse of gold with which they presented him. Two years before his death he was for a time laid aside by an attack of paraplegia, from which, however, he almost completely recovered. The enforced pause in his over-busy life served, as such pauses often do, a good end ; and when a second attack of paralysis carried him off suddenly, it found him walking guided by that “kindly light” which he had first learned to look upon amid the gloom of two years before.

These all may be said to have died prematurely, for they had not attained the full age of man, and might have been expected to add something more to the common stock of knowledge, to do something more for the benefit of humanity.

I come now, however, to a name which we cannot mention without a more than common sorrow, that of Dr. Bathurst Woodman, who had shown great promise, and more than that—who had accomplished more in his comparatively short life than most do who live much longer. Nor is this his only claim to our remembrance, but he has left behind him the highest testimony to his personal worth—a memory cherished with affectionate regard by those who knew him best and longest, for they who had been his teachers remained through life, and continue still after his death, his attached friends.

To one of them I owe the brief story which is all I can give to keep his memory fresh and green among those who knew him. He was born in the year 1836, at Codenham, near Minstead, one of the loveliest spots in the beautiful New Forest, where his father was a Dissenting minister. He grew up there, making up by earnest reading for a too unsystematic and desultory education; and his mastery of modern languages shows that he turned his opportunities, or his want of them, to the best account. He began his studies at the London Hospital in 1858, and during his pupilage impressed every one by his earnestness and thoroughness in all his work. He joined the College of Surgeons in 1861; after which he held the office, first of Resident Accoucheur, then of House-Surgeon to the Hospital; and after a short experiment in general practice at Torquay, he returned to London to the scene of his studentship. His history, unlike that of most of us, was not one of more or less successful competition for appointments, but of those who had them to bestow competing for his acceptance of them. First, Resident Medical Officer to the London Hospital, then Clinical Assistant for Out-patients; then in 1870, having previously been admitted a Member of the Royal College of Physicians, Assistant-Physician to the Hospital. He had previously shown, as Medical Superintendent of the Cholera Hospital at Limehouse, his power of earnest work, and in the report of it published in vol. iii. of the *London Hospital Reports*, his ability to turn that work to the best account.

From that time till he died his work was incessant: he contributed papers to various journals, and took besides an active share in the proceedings of this Society. He translated and edited Wunderlich's treatise on Medical Thermometry, he lectured on Physiology, examined at Apothecaries' Hall, took a part in the composition of a paper which was thought worthy of publication in the *Philosophical Transactions*, and the composition of which required a thorough acquaintance with the details of medical chemistry. Add to this that he was joint author with Dr. Tidy of a work on Medical Jurisprudence, with which, if one can find a fault, it would be that the amount of matter which it contains was beyond the powers of the author, as it is of the reader, to digest, and that all this time he had to perform, and performed well, the duty of Assistant-Physician to the Hospital: and what wonder if body and mind, thus overtaxed, gave way! They gave way just when reward, which had seemed so



slow in coming, came at last, and the Physicianship to the Hospital and the Fellowship of the College of Physicians had just been conferred upon him. Success came, and reputation, but came too late to save him. Perhaps he had sought for them too eagerly—for the desire for them is apt to cast a strange glamour over the clearest intellect, and cause it to forget what the poet tells us, that

Fame is no plant that grows on mortal soil,  
But lives and spreads abroad by those pure eyes,  
And perfect witness of all-judging Jove.

Be this as it may, he was broken down beyond recovery when the reward came, and he was pressed down by sorrows too sacred for me to speak of here. At length he gave way, as the bow breaks when overbent, or as the wearied traveller falls at last beneath the burden which he has long carried, and in bearing which he has found no helper.

— with fairest flowers  
I'll sweeten thy sad grave,

or rather, we will all look beyond the grave, to where, in peace at last, he watches us vainly struggling here; and could he make his voice heard, it would, I doubt not, be to urge on all, especially on our younger Fellows, on some of whom life's troubles may possibly now be pressing, the words which for one sad moment he forgot—"When my heart is overwhelmed, lead me to the Rock that is higher than I."

From some graves, as from this, we turn with sorrow; others we contemplate with a feeling of satisfaction—the vessel brought at last "to the desired haven." And thus, happily, we may make mention of the last name upon my list—that of Mr. Robert Dunn, of Norfolk Street, with whose kindly face and friendly greeting most of us were familiar. He belonged to an old Northumberland border family of landed proprietors, and was born at East Brunton, in the parish of Gosforth, in the year 1799. His ancestors were for many generations Lairds of Macfen, in the county of Northumberland; but he valued more highly his descent on the maternal side from the family which gave Bishop Nicholas Ridley to the Church of England. I may, in passing, just observe that a lineal descendant, as some would have it, he could not be, since the good Bishop was never married; and as the Roman Catholic writer (Dr. Lingard) tells us, "his refusal to avail himself of the permission to marry, though he condemned not the marriage of others, added to his reputation." But so is history written.

Mr. Dunn was educated at a private school at Newcastle, conducted by a Mr. Atkinson, who is said to have been a profound mathematician, and a distinguished member of the Literary and Philosophical Society of that town. He served an apprenticeship to Mr. W. Davison of Alnwick, but did not begin his medical studies in London until the age of twenty-five, when he entered as a



pupil of the then united medical schools of Guy's and St. Thomas's Hospitals.

In Mr. Dunn's case at least the much-decried apprenticeship system worked well. Exceptional cases indeed prove nothing, but I cannot but connect his robustness of mind in some degree with the fact that he came to the systematic study of his profession with the intellect of a man, not with the mere sharp-wittedness of a lad. One hears that the racing of two-year-olds damages the breed of race-horses. I am not quite sure that the youth who answers questions concerning all things knowable at eighteen, turns out the best medical practitioner at eight-and-twenty.

The friendship of Dr. Addison, with whose family he had been on terms of intimacy from boyhood, stood Mr. Dunn in good stead during his student-days and after. He became a Licentiate of the Apothecaries' Society in 1825, and a Member of the College of Surgeons in 1828; and he settled down in practice in Norfolk Street, Strand, where the rest of his life was passed—apparently drawn to that locality by its nearness to the Carey Street Dispensary, to which Dr. Roots and Dr. Addison were then Physicians—and where he spent for many years all the time that he could spare from a steadily increasing practice, in the endeavours to perfect his knowledge.

Honest work always yields good fruit; so did Mr. Dunn's. He contributed to the first volume of the "Transactions" of this Society, in 1859, a paper on the "Statistics of Midwifery," deduced from more than 4000 cases occurring in his own practice. The paper is of value and interest; the interest dependent not merely on the facts which it contains (themselves of no mean importance), but as displaying the earnest simplicity of mind which was so marked and so beautiful a feature in his character. But he did not confine his attention to what are commonly called practical subjects. The phenomena of the mind, the disorders of its action, the connexion of those disorders with diseases of the organ through which it acts; the various problems connected with the mental development of different races, and their relation to special conditions of the brain; the psychological characteristics of different races of men; the evidences in favour of the unity of the human species—occupied, I can scarcely say his leisure, but rather I should say engaged his less busy hours.

And what, some may ask, was the outcome of it all? what new truth did he bring to light? what old truth did he substantiate? I have not the knowledge critically to estimate the value of each of his essays, and to assign to all their exact worth. But I know that the increment of our knowledge is the total of the small additions made by each honest observer. "Symbolum aliquod, utcunque exiguum," was all that Sydenham ventured to say of his work; what shall we say of ours? Nor only so, but if, as most of us believe, we are placed here in a trial state, to cultivate our intellect, to improve our moral being with reference to a higher, nobler condition than this, just as our first parents were placed in the garden "to dress it and to keep

it," when yet out of the ground there grew of its own accord, untilled, uncared for, every tree that was "pleasant to the sight, and good for food," so should our self-improvement be to us as it was to them, the motive and the spur to our own diligence.

It was thus that our friend understood life and life's duties. That in discharging these duties he was honoured and respected and beloved; that he became a member of this society and of that, a Fellow and Vice-President of the Medical and Chirurgical Society, one of our original associates; the President at one time of the Metropolitan Branch of the British Medical Association, what profits it to tell, except for this—that one is always pleased to hear of merit meeting with due recognition. One believes that in his case it met with it all the more because his every effort was directed to deserve, not to claim, reward.

For the last year or two of his life health began to fail him, old age set its mark upon him, and the symptoms of heart disease gave him warning. But he was active and good-doing to the last. He died as he had lived, passing away quietly, unexpectedly, in the night of November 4, 1877, giving no one any trouble, but just going to sleep as usual, and waking on the morrow to sunnier skies and in a brighter realm.

And now, gentlemen, my task is done, and I have tried to discharge for our deceased friends the office which some kindly occupant of this chair will do another day for you, for me. It were idle or worse to try to moralise on subjects so trite as those which these short life-notice suggest—the much to do, the little time to do it in. All that I fain would say is summed up in the motto inscribed beneath the sun-dial in Old Square, Lincoln's Inn, which, as it tells us of the fleeting hours, adds the reminder, "*Pereunt, et imputantur.*"

## OBSTETRICAL SOCIETY OF EDINBURGH.

*Meeting, Wednesday, June 13th, 1877.*

Professor SIMPSON, *President, in the Chair.*

Dr. JAMIESON exhibited a foetus which had been born dead and doubled up, the centre of spine presenting. It had been delivered by version. The patient was multiparous.

Dr. YOUNG showed a cellular polypus which he had removed from the os uteri. The patient had lost a great deal of blood and had fainted. The polypus was seized with a pair of long forceps and twisted off.

Dr. UNDERHILL exhibited for Dr. M. Duncan a preparation illustrative of diseased kidneys of the foetus. The condition was one of cystic degeneration. The whole of kidney substance was apparently involved. No history of the labour had been obtained.

Dr. YOUNG communicated for Dr. Porteous, of Pathhead, a case of

vicarious menstruation, in which bleeding occurred from nose and ears. The patient had the same disagreeable and painful sensation, also a dark line below her eyes, as she experienced before the ordinary catamenial flow. The girl is not nine years of age. Menstruation commenced, Dr. Porteous says, at  $6\frac{1}{2}$  years of age.

Dr. ALLAN JAMIESON read a paper on the systematic prevention of after-pains.

Professor SIMPSON thought the subject important for discussion. He wished he could feel sure that this line of treatment would always succeed. One of the last cases he had attended was in a case of twins in which he had used ergotine, yet patient had after-pains, although not very severe. He desired to know if any of the Fellows had tried Dr. Sidey's treatment of after-pains by means of acupuncture.

Dr. GORDON referred to a patient who had four confinements without after-pains. Chloral he found of most service in such cases. He saw no need of injecting ergot. The old manner of giving the remedy was quite satisfactory.

Dr. YOUNG had not used ergotine for after-pains, and thought it was unnecessary; he preferred ergot by the mouth. Many patients have no after-pains.

Dr. CROOM had not found after-pains of any extent where he injected ergotine.

Dr. JAMES CARMICHAEL thought the point of Dr. Jamieson's paper was, that he advised the systematic use of the remedy in every case of labour. This practice was not new, as many obstetricians gave ergot systematically in the third stage, and he believed the practice to be essentially sound. As to the use of ergotine, he did not believe, except in special cases, that it had any advantage over ergot given by the mouth.

Dr. UNDERHILL thought the objection to Dr. Jamieson's treatment was that it was unnatural. Ergotine could not influence the occurrence of after-pains coming on a considerable time after labour. He did not think Dr. Jamieson had adduced sufficient evidence to prove his case. He had lately attended a case of twins in which he gave ergot with good results.

Dr. YOUNG thought much depended upon perfect contraction of the uterus by pressure.

Dr. JAMIESON, in reply, referred to some points in anatomy of the uterine veins. He thought ergot slower in action than ergotine, therefore not so useful. As to late occurrence of after-pains, he had seen it, but not when ergotine had been used.

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*Meeting, Wednesday, July 11th, 1877.*

*Dr. WILSON in the Chair.*

Dr. JAMES CARMICHAEL exhibited an anencephalous foetus born co-twin with a healthy child; and also the placenta, which were separate.

The amniotic sac of the anencephalous foetus was greatly distended with fluid. A recent clot of blood was observed between the membranes, about three inches from the placental margin. The clot was recent.

Professor SIMPSON showed a large fibro-myomatous polypus. The large fleshy mass was divided into four unequal segments, which together formed a rounded body of the size of a large male infant's head. The following notes of the case had been extracted from his ward journal by Mr. Walter Strang:—

C. A., aged forty-six, residing at Prestonhall, near Markinch, was admitted on Tuesday, 3rd July, 1877, to bed 4, Ward XII., on the recommendation of Dr. Macdonald, of Markinch.

She complained of flooding and whites.

*History of Present Illness.*—The usual duration of her menstrual flow had been three days; but about two years ago it began gradually to increase from month to month, till about November, 1875, she began to suffer from distinct menorrhagia. The flow at that time lasted eight days, was excessive in amount, and accompanied with clots. The duration and amount of flow kept on increasing, so that for the last eight months she had menstruated for a fortnight at a time. She has not had much pain at any time, but feelings of intense exhaustion. In the intermenstrual period there was profuse leucorrhœa. About a month ago, at the commencement of menstruation, she took a pain in the back so severe, that the doctor had to be sent for immediately. Some medicine which he gave her relieved her pain.

*Menstrual History.*—She commenced to menstruate at the age of fourteen. Till her present illness, the duration of the flow was always three days, and menstruation recurred with perfect regularity every twenty-eight days.

*Obstetric History.*—She married at the age of twenty-seven, and has had four children, the eldest born twenty-one months after her marriage, the youngest eleven years ago. The ages of the children are, 17, 15, 13, 11. She has had two miscarriages, the first (third month) occurred nine months after her marriage; the second (also third month) took place about nine years ago. Flooding continued for about eight days after the last miscarriage.

All her labours have been easy and normal.

Her general health has been excellent till within the last two years, and now she presents a pale, weary, almost cachectic appearance.

The lower part of the abdomen was occupied by a firm body, reaching nearly a hand-breadth above the pubes, and of the form and feel of the enlarged uterus. A distinct vascular bruit could be heard with the stethoscope, loudest on the right side of the organ. On making a vaginal examination, the exploring finger meets a body immediately within the vulva, firm and fleshy, distending the vaginal walls, and filling up the whole pelvic excavation. On combined external and internal examination, the vaginal mass is felt to move in



concert with the uterus; but it is utterly impossible to reach the vaginal roof, or to pass a sound into the uterine cavity.

*Operation.*—On 7th July, the patient, having been put under the influence of chloroform, in the presence of Dr. Macdonald, Dr. Caldwell from Illinois, and others, Professor Simpson passed his left hand into the vagina, and ascertained that the growth came from within the uterus, though the root of it was not accessible. As neither the chain of an *écraseur*, nor the platinum wire of a galvanocaustic battery, could be passed high up on the body, the most prominent portion of it was crushed off with the *écraseur*. A second and a third section were thus removed before the body was so far reduced in bulk to allow of its pedicle being reached.

This was now found attached to the back wall of the uterus, above the os internum. It was encircled with the *écraseur* and crushed slowly through, and the wound surface measured  $1\frac{1}{2}$  inches in diameter. There was no great loss of blood. The perineum was lacerated from the passing in of the hand, and the extraction afterwards of the mass. The cavity was syringed with some warm water and carbolic acid; and after the patient was put in bed, an opiate was administered.

There has been no bad symptom since the operation. The vagina is syringed twice a day with warm water, and there is every prospect of a good recovery.

Dr. BRUCE read the following paper on the resuscitation of still-born children, with cases:—The subject of the resuscitation of the still-born infant is one of great importance, and it is most desirable that the best method of insuring success should be thoroughly appreciated.

I feel quite convinced, that a little want of decision and energy will, in some cases, make all the difference between having a living or a dead child to hand over to the nurse.

Two cases lately under my observation strongly impressed me with the value of artificial respiration after other methods had failed.

No one can be engaged in midwifery practice without meeting with still-born children every now and then; the proportion in my practice being nearly four per cent. Many of these had been dead for a variable period, hours, days, or weeks previously; others were premature and could not have survived their birth; while some were monstrosities. But there remained a certain proportion known to be alive, until, at least, very recently before birth, and it is to such cases that the present remarks refer. To those in which respiration does not begin spontaneously at birth, and yet where the heart has not entirely ceased to beat, for I think the cases are very rare where attempts at resuscitation will succeed, when auscultation or pressing the fingers under the ribs fails to detect any impulse in the cardiac organ.

Cases of still-born children may be divided into those where attempts at resuscitation would be useless, and those where there is,

at least, some prospect of success. The great majority of remediable cases are brought round without much difficulty by ordinary measures; hot and cold water alternately, or the cold affusion; friction with spirits over the cardiac region, slapping the back or nates, &c.; but there is a certain proportion which resists these measures, and where our only prospect of success lies in the induction of artificial respiration. The Sylvester or the Marshall Hall methods I have not found very efficacious in the infant, and therefore would not put off much time in giving them a trial. Undoubtedly, the best plan of all is to pass a tube fairly into the larynx, and transmit air directly to the lungs. Some advocate applying the mouth of the practitioner to the child's mouth, while the cartilages of the larynx are pressed backwards to close the œsophagus, the nostrils at the same time being held. This is a very ready method, but by no means an elegant or even a very successful one. The only admissible plan is to pass the tube into the larynx, and then convey air to the lungs either by the lungs of the accoucheur, or by means of one or other of the apparatuses invented for the purpose, such as an india-rubber ball, probably one of the simplest and the best.

I am disposed to think that, besides being a readier method, the warming of the air by the operator's mouth and lungs is rather an advantage; and as for this purpose he must take in a larger supply of air than he requires for his own purposes, what he has to spare will be sufficiently pure for all practical purposes; while, if need be, any mucus or other fluid filling up the trachea, and interfering with respiration, may be removed by suction, though for this purpose an apparatus might be more agreeably made use of than the mouth.

Among the more important causes of still-birth are tedious labours, prolapse of the cord, breech and inferior extremity presentations (including turning). The first of these is to a great extent under command by the timely use of forceps. Prolapse of the cord is comparatively unfrequent, but breech and footling cases are quite common; and, perhaps, it is as a consequence of such that our aid will most frequently be required. Certainly they give rise to a great deal of anxiety, when from the large size of the child's head, or the disproportion of the pelvis, we find a difficulty in completing the labour; for, although the forceps are quite at hand, so much time may be expended in the extraction of the head, that all attempts at resuscitation are in vain. The two cases which have led me to bring these remarks before the Society were examples, the one of a knee, and the other of a breech presentation.

CASE I.—Mrs. J., in labour on 25th April last with her eighth child.

On my arrival, finding the os fully dilated, I ruptured the membranes, and a large quantity of liquor amnii escaped.

There was no difficulty in the delivery, until it came to the head, which, being of large size, necessitated a considerable amount of traction, and a corresponding loss of time before it could be extracted.

I do not think the forceps would have expedited matters here, and they were not made use of. The child, on being born, gave one or two slight gasps, and then all efforts to respire ceased entirely; however, the heart was felt to pulsate, and attempts at resuscitation were at once proceeded with by the usual methods, as already referred to. They were, however, attended with no success; the heart beat more and more slowly, and it seemed as if the child was almost past recovery.

Without losing any more time, I at once introduced a female catheter into the larynx, and by direct inflation carried on artificial respiration. After continuing with this for some time, the pulsations of the heart were found to increase somewhat in frequency and strength, while the colour of the skin changed slightly from its previous deathlike paleness; then feeble attempts at spontaneous respiration began, at first at long intervals, then gradually becoming more and more frequent; symptoms of vitality evidently increased, and in a little while longer, circulation and respiration were fully established about half an hour after birth.

This case seemed so hopeless at one time, and the nurse was so impressed with the uselessness of persevering any longer in the attempt to resuscitate, that she begged me to leave the child alone and attend to the mother; but as she did not particularly require any attention from me at the moment, and as I had not given up hopes of the child, I disregarded the injunction and persevered in my own way.

The result was extremely satisfactory, and exemplified in a marked degree the advantages of artificial respiration, when other measures had signally failed.

CASE II.—Mrs. G., confined 1st of June. Her tenth pregnancy and eleventh child, having once had twins. She has been extremely unfortunate with her children. Four were still-born; of the others, one died at eleven months; the remainder survived only a few hours or days, and she is now left without any. The patient is very pale and weakly in appearance, but enjoys good health in general. The early period of this pregnancy was attended with a great amount of sickness, but afterwards nothing remarkable. The labour was an ordinary case of breech presentation, and there was no difficulty met with until it came to the expulsion of the head, which was attended with some little delay. On being born, the infant showed no signs of life, except that the heart beat very slowly.

Here again the ordinary treatment of the still-born was of no avail, so I immediately introduced the female catheter and carried on artificial respiration. This was continued for a little while without any response, then gradually the heart was observed to beat stronger and quicker, and there were decided symptoms of returning vitality, as shown in attempts at respiration, short gasps every now and then, while the gums closed firmly on my finger. There was also occasional contraction of the muscles of the face, as if about to cry.

My hopes were raised, and I confidently expected to be as successful in this as in my other case. I was disappointed, however, to find that when I relaxed my efforts the infant only respired very slightly once or twice; while the cardiac impulse perceptibly lessened in force and frequency. A renewal of my exertions brought about a return of the favourable symptoms, only to relapse again on their discontinuance. Three hours and a quarter elapsed before I could make up my mind that any further continuance of the struggle was useless—that there was some unfavourable condition of the system present which counteracted anything that I could do. I had, in a manner, kept in life for a considerable time, and given every opportunity for the vital force to come into play, yet, after all, was reluctantly compelled to inform the mother that she must make up her mind to add another to her long list of disappointments.

Although in this instance the result was not a living child, still it was so far a success, proving the immense value of artificial respiration in sustaining life, though in a minor degree, throughout so long a period, as, when the process was finally relinquished, all signs of vitality rapidly ceased.

No opportunity was afforded me of afterwards ascertaining by section the nature of the physical condition which rendered nugatory a successful result. I would here remark that the female catheter is not the best instrument to pass into the larynx, the curve being too slight, and, further, having generally only one opening, it will be found sometimes that this opening gets closed up from pressure upon some of the textures with which it is brought in contact, and then no air will enter the lungs; besides, there is undue pressure upon some places, which is completely obviated by using an instrument with a proper curve, and it is not only more readily introduced, but, moreover, less liable to injure the passages. Another improvement would probably be to have several small openings near the end, and one quite at the extremity of the tube,—something of the kind I now show you, which has just been made for me by Mr. Gardner.

As to the introduction of the instrument, there is no difficulty whatever; the left forefinger acts as a guide by being passed over the tongue, and resting upon the rima glottidis; that you have succeeded will at once become evident on attempting to inflate the lungs. The operator ought to inspire very fully as well as rapidly, and repeat the process often, alike to imitate the more frequent respiratory movements of the infant, and to allow air as much oxygenated as possible to enter its lungs. Care must also be taken not to blow through the tube with too great force, lest we should do injury to the delicate air-cells, and yet making sure that we expand them sufficiently, as a too feeble rush of air might defeat our aim.

I have brought these cases under the notice of the Society, not to illustrate any new method of treatment, but to impress upon those who may not have given the subject so much attention as it deserves,



the necessity of never considering a child past recovery until artificial respiration has had a full and fair trial, more particularly where the slightest pulsation of the heart can be detected, and, if in any doubt whatever, always to give the infant the benefit of that doubt.

Dr. RITCHIE mentioned a method of establishing respiration in the foetus by flexing the thighs of the foetus upon the chest. He did not approve of using the tube as frequently as Dr. Bruce was in the habit of doing, although it was perhaps a more certain means than any other.

Dr. GORDON thought galvanism might be of use in keeping up the action of the heart, and that we should never despair of establishing respiration when the heart's pulsations were active.

Dr. BRUCE wished Dr. Ritchie and the Fellows to understand that, although he advocated the use of the tube, he did not deprecate other methods; but, on the contrary, always had recourse to them in the first instance, and it was only in the comparatively rare cases where such did not succeed that he would recommend direct inflation. He was confident that in certain cases it was the only means of saving life, and ought never to be lost sight of, while he did not consider there was any danger connected with the operation when properly carried out.

Professor SIMPSON expressed the regret which he was sure was felt by all the Fellows present, but in consequence of the amount of business to be transacted at this closing meeting there was not time to enter on a fuller discussion of the important subject which had been brought before them in Dr. Bruce's interesting communication.

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Dr. MATTHEWS DUNCAN communicated, for Dr. Wilson of Alloa, the following case of labour impeded by enlargement of the kidneys. The paper was accompanied by a notice by Mr. Hamilton of the pathological condition of the kidneys after examination:—

*Case of Labour Impeded by Enlargement of the Foetal Kidneys.*

I was called late on Friday, 8th June, to see Mrs. A., aged twenty-three, primipara, and was informed that the waters were discharged and that she was in constant pain. On examination, the mouth of the womb was found closed, and the cervix rigid. There was no change till 10 P.M. on Saturday, when I managed to pass two fingers within the os uteri. About 3 A.M. on Sunday, the head, after severe pains, was born. Then the difficulty appeared; the shoulders would not advance, and it was after some exertion that I brought down first one arm and then another. Now further progress was completely arrested. As the child was dead, I passed a clove hitch around it under the armpits, and, while pulling upon it, passed my left hand along the anterior surface of the child and could feel the belly enormously enlarged.

Not caring to have all the responsibility, I sent for my friend Dr. Kirkwood, and asked him to bring his perforator. After con-

sultation, we resolved to eviscerate. Passing my left hand up to the belly of the child, and guiding the perforator along my arm and palm of the hand, I pushed it into the abdomen, made a crucial incision, and removed part of the intestines, &c. ; but still it would not move.

Dr. KIRKWOOD then placed her under the influence of chloroform, and we removed the already much injured head and shoulders from the body of the child.

I then insinuated my hand into the uterus and seized the right foot and managed to get it so far down that, passing a noose over my left wrist and slipping it up over my hand, I fixed it around the ankle of the child. Then, drawing upon it while pushing up the body of the child, we effected nothing. The left foot lying high in the fundus of the uterus was now seized ; and, having got both legs, I completed turning by pulling upon them while simultaneously pushing up the body. The left hand was now placed in the wound of the belly in order, by pulling, to assist the traction by the legs. Thus delivery was effected.

My attention was now directed to a large tumour in the abdomen of the child, which appeared to be an enlarged kidney attached in its ordinary way. Previous to the extraction of the placenta, its neighbour was found in the uterus and removed.

On the placenta being removed, flooding set in, and was arrested in a few minutes by ordinary remedies. Subsequent recovery was impeded by retention of urine, fever, and slight albuminuria.

The kidneys were exhibited by Dr. Matthews Duncan at last meeting of the Society ; and he now presented an account of them, for which he was indebted to an able pathologist.

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*Report on two Kidneys from a Fœtus at full time, by Dr. Hamilton.*

Each kidney weighed 1 lb. and measured in length  $5\frac{1}{4}$  inches, in greatest breadth  $3\frac{1}{4}$  inches.

The organs had each a somewhat rounded shape, and were of flabby consistence. On cutting into them, no division could be seen into medulla and cortex ; but the whole kidney substance was converted into a gelatinous-looking material, in which were enormous numbers of cysts varying from a pin's head to a pea in size. They contained a quantity of clear fluid, which escaped in large quantity on section. The capsule stripped off very easily, and left a smooth surface, on which numbers of the above-mentioned cysts could be seen projecting.

Neither the pelvis nor the ureters seemed dilated ; the ureters certainly were not so, and in the portion attached to the organs no obstruction was to be met with.

On microscopic examination, numbers of apparently normal tubes were seen, while others, and by far the greater number, were in different stages of dilatation. Each cyst seemed to consist of a

dilated tubule or Malpighian capsule. They were lined by an epithelium and had a *membrana propria*. The intervening textures were in some places enormously abundant, and consisted of fibrous material in different degrees of development, which, however, in many places presented exactly the features of mucoid degeneration. This consisted in the stroma becoming transparent and leaving the connective tissue corpuscles lying in a clear matrix. The cystic disease was most developed in the medullary portion, least so towards the capsule. In the cortical portion, close to the capsule, there was very little of the mucoid degeneration, but a large quantity of fibrous tissue between the tubules. The explanation of the affection in the foetus is in all probability to be seen in the mode of development of the kidney. The cause of the dilatation has evidently been some obstruction; and this apparently has not been in any part of the ureters, otherwise we should have expected some further change in them. It has evidently been what Klebs calls a "papillary atresia." According to him, this is due to a fault in the complete development of the organ. It is a fact made out by Kupffer, Schenk, and others, that the tubules of the kidney and the ureters are at first separate—that is to say, they are developed separately, and only communicate in later embryonic life. One can easily understand how, from various causes, this communication might be disturbed. In this case it has evidently been by an excessive development of intertubular tissue in the medullary, or rather the papillary, portion of the organ. Whether this has been inflammatory or not is not so clear; but, from absence of any other signs of inflammation, such as adhesion of the capsule, it has in all probability been merely an excessive development of the intertubular tissue derived from the prevertebral. The tubules have evidently excreted a certain quantity of fluid; and this, along with the atresia of the papillæ, furnishes the factors for a cystic degeneration. The enormous size of the organs is due to—(1) The large number of cysts; (2) The increase in the intertubular tissue.

Professor SIMPSON referred to a similar case which had occurred in the practice of Dr. Key, of Montrose.

Dr. MACDONALD thought the pathological interest of the case was very great.

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Dr. MATTHEWS DUNCAN communicated, for Dr. Hunter, of Jedburgh, the following case of Labour complicated by Prolapse of the Leg:—On 10th January, Mrs. K. sent for me to attend her in labour. I saw her in the afternoon, and found she had been ill all the forenoon and morning, and that she did not expect to be confined till about six weeks or two months later. It was her first confinement.

On passing my hand over the abdomen, I found the uterine tumour small, corresponding with her opinion as to the period of

pregnancy she had reached. Making internal examination, the finger came in contact with a foot, which had passed the brim of the pelvis and was easily examined. The cervix was fully dilated, the bag of waters broken, the parts moist, dilatable, and roomy.

On further examination, passing the finger above the foot and ankle, I found the head, having the dorsum of the foot in contact with its presenting surface. Naturally, I thought there were twins, and tried to push up the foot above the head, so as to allow the latter to come down. I did not, on account of the patient's complaints, introduce my whole hand to attempt the replacement; and I soon desisted from further efforts to effect it.

Now, considering that the case was one of twins, between the seventh and eighth month, and that, as the abdomen was small, the children were probably small, that the mother was young and the parts roomy and dilatable, I concluded to let things alone for some time.

The pains, during my presence, were not strong, and, for half or three-quarters of an hour, produced no advance of the labour. The presentation continued as before. After another quarter of an hour I found the head on the perineum, and beginning to protrude from the vulva. There was no foot to be found now, and another pain or two expelled the head alone. I am not sure, but had a strong impression, that the foot came with the shoulders. Thus, the labour was easy, not tedious, and ended quite satisfactorily. The child was small, and seemed about the eighth month. It lived three or four days only, but did not receive due care.

Before the child was dressed, I replaced the foot as it had been during labour, and it was quite easily done. The foot had some tendency to remain in this abnormal position, to which it had been perhaps accustomed for some considerable time. The hip-joint was very accommodating.

The head presented in the first position; but I cannot remember which leg was prolapsed.

Dr. MURRAY mentioned a case which he had met with in which foot presented along with the head, and there was also prolapse of the cord.

Dr. MILNE thought that there should never be delay in these cases—delivery should be effected at once.

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*On the Nature and Mechanism of Spontaneous Rupture of the Uterus in its Cervical Portion.*

By ANGUS MACDONALD, M.D., F.R.C.P.E., Lecturer on Midwifery and the Diseases of Women and Children, Medical School, Edinburgh.

Now nearly six years ago I received the accompanying uterus and notes from my friend Dr. Philip Hair, of Carlisle. The specimen and the notes were accompanied among other things with the expres-



sion, that Dr. Hair hoped I would be able to throw some light upon the causation of this rupture, and that the preparation might be a useful addition to my museum. It was carefully laid aside as a valuable specimen—the unfortunate fate of very much excellent material, that had far better be cut up and described—but I did not at that time feel competent to explain the mechanism of the rupture.

But many things have happened since 1871; and among other evidences of progress in the department of scientific midwifery, our knowledge of the nature and causation of rupture of the uterus stands forth as a bold headland in the line of advancement.

The consequence is that we are in a position to answer such a query as was put to me by Dr. Hair in 1871 without any hesitation, and manifestly not in the manner in which, to judge from his brief note, he himself expected it ought to be, and would be, answered.

In January of this year, a patient died after a long labour, eventually terminated by me by craniotomy, of whose body we obtained leave to make a section, and whose pelvis I am now able to lay before you. As in her case also we found evidence of cervical rupture, it appeared to me that the two cases might profitably be made the subject of a communication to this Society.

If I am able in the sequel, as I am persuaded is the case, to show that rupture of the uterus, at least in the cervical segment of the organ, the only situation in which it is likely to occur, instead of being of the nature of an accident which one cannot be expected to foresee—or, to put it strongly, instead of being a sort of visitation of Providence, is due to the mutual action of certain conditions and forces, which one ought with ordinary care to be able to detect long before rupture takes place, and therefore to be able to prevent the occurrence of uterine tear, a sufficient justification will, I feel convinced, have been made for my temerity in taking up the time of the Society with this subject for a little.

With these preliminary remarks, I proceed to record the cases with all possible brevity, giving the first in Dr. Hair's own words, supplemented by a slightly more detailed account of the condition of the cervix as it is now laid before you, after years of preservation in spirit.

I wish also to draw your attention to the pelvis found in Dr. Hair's case. It presents us with a very well-marked specimen of the flattened pelvis of a somewhat high degree, though not extreme. As is usually the case in such pelves, the transverse diameter, though quite large enough relatively, is decidedly shorter than it ought to have been had the pelvis been normal.

I wish further to direct your attention to the statement made by Dr. Hair regarding the pressure of the child's head as a cause of rupture, and also to there being a large tubercle upon the left pubic ramus. Dr. Hair does not say whether it involved the transverse or descending ramus. These causes, I shall show further on, I regard

as quite secondary, if they indeed took any part in bringing about the lesion. The following is Dr. Hair's report:—

*CASE I.—Prolonged Severe Labour in Narrow Flat Pelvis—Version—Death an hour and a half afterwards—Rupture of Uterus found on section.*

Elizabeth Owens, aged thirty-five, Carlisle, Thursday, 28th September, 1871. I was three times called to Dr. Sullivan's assistance on account of his not being able to deliver this woman, who had been in labour since the Sunday at midday previously—ninety-six hours. Dr. Sullivan was called on the Thursday at 11 A.M., a midwife having been in more or less constant attendance since Sunday. Dr. Sullivan said he found the vertex presenting, but in an unfavourable position. There were no labour-pains during this time. The promontory of the sacrum was very projecting. He tried to restore the head to a more favourable position, and then put on forceps, but after locking these was unable to deliver the patient; in a second and third attempt he failed. He now attempted to turn, and passed up his hand for that purpose. After considerable difficulty he was able to seize a foot and bring it into the cavity of the pelvis, but could not effect version. Having thus failed, he sent for me. It was now 3 P.M. There was no labour-pain. I found the right foot in the pelvis. The head was tightly jammed in the brim, and immovable in the second position, the occiput more depressed and more to the linea iliopectinea. Higher up still could be felt what I supposed was an elbow. I tried to effect delivery by the forceps, could fix them and use a little force, but they did not take hold of the head sufficiently far forward. I then determined to bring down the foot. I may say that the patient was never put under chloroform until I examined her. When under the anæsthetic I was able to seize the left foot, and then pushed the hand up to the right side. Turning was now easy. The difficulty in delivery arose when I had to get the head to engage in the pelvic brim. I at last got my fingers into the mouth, and by depressing the chin of the foetus effected delivery about thirty minutes after I arrived.

During the whole morning she had been sick, and vomited several times. She never rallied after delivery, and had a cold, clammy sweat all over her. The pulse, which was very small, became now more and more imperceptible, and at last could not be felt at all. The placenta came away without trouble. There was no hæmorrhage. Stimulants, ammonia, and bark were administered, yet the patient died exhausted an hour and a half after the delivery.

Post-mortem, twenty-two hours after death, 29th Sept. 1871. Present, Drs. Elliot, Sullivan, and Hair. Rigor mortis well marked. Incision made from umbilicus to pubis. The abdominal wall contained a thin layer of fat. In the cavity of the abdomen was found three to four ounces of serum and some blood-colour. The peritoneum (parietal and visceral) as far as the umbilicus was much con-

gested and dark coloured, some parts so dark as to look like gangrene of long standing; other portions were of a more recent appearance. Uterus anteriorly and inferiorly very dark coloured, softened, and the detached contiguous surfaces were rigid and vascular.

There was a deficiency in the uterine wall sufficiently large to admit the whole hand. The separated part corresponded to the posterior aspect of the bladder. The detached portion of the uterus was separated all round. This flap had been separated during life as the result of pressure by the child's head—in fact, mortification or sloughing had set in. The subperitoneal wall was almost as if it had been pounded like a jelly, having dark grumous blood extensively diffused through it.

The promontory of the sacrum projected very far forwards; also the left pubic ramus had a large tubercle upon its inner surface, close to the symphysis. The measurements of the pelvis were as follows:—

Antero-posterior diameter of the brim . . .	3 inches.
Transverse diameter . . . . .	$4\frac{5}{8}$ „

The child's head presented the following dimensions:—

Biparietal diameter . . . . .	$3\frac{5}{16}$ inches.
Occipito frontal . . . . .	$4\frac{1}{2}$ „
Occipito parietal . . . . .	$5\frac{3}{16}$ „

In regard to this uterus, we notice that the tear passes transversely across the cervix, throughout nearly one half of its lower third anteriorly. This is joined near the left edge of the cervix by a longitudinal rent which passes up to, but does not involve, the body of the organ. The perpendicular tear intersects the transverse three-fourths of an inch to the right of the extreme left extremity of the cervix. It does not cross the circular tear. It is observed that the cervical portion of the uterus is much elongated and thinned, contrasting very markedly with the thickened body and fundus. Even when shrunk by being long kept in spirit, the longitudinal measurement of the cervix, anteriorly along the line of rent, amounts to about 4 inches, and posteriorly to  $2\frac{1}{2}$  inches. It is also to be noted that the vaginal portion of the cervix is still persistent to the right and posteriorly as a tolerably thick projecting fringe varying in depth from three-fourths to one-fourth of an inch, but along one-fourth of its circumference, being the left anterior quadrant, it has almost entirely disappeared, this corresponding inferiorly to the left half of the rent. The section along the thickest, that is upper, part of the torn surface, measures one-eighth of an inch, and along the lower portion is in many parts reduced to little more than the thickness of paper. The anterior wall in the body and fundus, again, is seen to measure fully half an inch in thickness, seems quite healthy in consistence, and contrasts very markedly with the thinned and membranous cervix.

It would thus appear that at the time this uterus ruptured the cer-

vical portion was stretched and thinned, its left and anterior portion much more so, however, than its right and posterior, and seeing that the anterior wall of the cervix, after so long drying, measures fully four inches, it must have been distended to five or six inches at least at the moment of rupture.

But I now proceed to record the second case.

CASE II.—*Prolonged Severe Labour in Small Pseudo-malacosteon Pelvis.—Craniotomy—Death after thirty-six hours.—Rupture of Uterus found on sectio.*

C. W., aged twenty-seven, unmarried, and residing at 47, C—Street, expected to be confined of her first child in December, 1876, and with that view engaged the services of Mr. George Harrison, a former dispensary pupil of mine.

It would appear that, at the age of sixteen, she was under the care of the late Professor Sir James Simpson, and was then made to lie on her back for six months.

There could not be elicited from the inquiries made any history of disease of the spine to account for this treatment, nor was it possible to deduce facts sufficient to establish the existence of rickets at any period of the patient's history, though from her smallness of stature one felt inclined to believe that such condition must have existed at some time. In the month of November, Mr. Harrison and Dr. Playfair (with whom Mr. Harrison was an out-door dispensary pupil at this time) examined the patient with the following results:—

Length of body . . . . . 4 ft. 5 inches.

External pelvic measurements—

External conjugate . . . . .  $7\frac{1}{2}$  "

From one anterior superior iliac spine

to another ? . . . . .  $9\frac{1}{8}$  "

From iliac crest to crest . . . . .  $9\frac{3}{4}$  "

An internal examination was also made at the time, but Dr. Playfair did not come to the conclusion that there existed a high degree of contraction. The perineum, however, was extremely resistant, so that considerable difficulty was offered to making an accurate exploration of the pelvis internally. On Monday, 8th January, 1877, C. W. fell in labour, and sent for Mr. Harrison. He found that she had been complaining of abdominal pains since 3 A.M. of that morning. Her pulse was 68, her bowels constipated. Mr. H. could not make out any presenting part. She continued in that state the whole of that day, sleeping occasionally for short periods.

On Tuesday (9th) she remained much the same. The waters were said to have been ruptured that day at 10.15 A.M. Pulse was still the same. Mr. H. made out no presenting part. He ordered nutriments, and gave thirty drops of laudanum at night, which was followed by sleep from 11 P.M. to 3 A.M.

Wednesday, 10th.—Patient vomiting frequently. Pains much the



same. Pulse 120. Patient had several doses of castor-oil, which were rejected. Matters were allowed to go on in this way by Mr. Harrison for the remainder of the week, only that he gave a soap-and-water enema on the 11th (Thursday), by which the lower bowel was emptied.

It was not till Saturday morning that Mr. Harrison could feel any presentation. He then found it was a head.

He meanwhile laboured under the delusion that the pains of labour had never become established, and that the abdominal pain was chiefly due to derangement of the bowels. In this view he was supported by the friends, who, not observing the ordinary down-bearing pains, fancied the poor woman was never ill. On Saturday he called at the dispensary and saw Dr. Playfair, managing to convey to him the idea that the patient was merely now beginning to be really ill, but that there was no immediate urgency to attend to the case. He saw C. W. on Sunday, the 15th, at 12 o'clock noon, and finding her in a serious condition at once communicated with me. I collected craniotomy and other instruments, and reached the patient's house at 1.30 P.M., finding her condition as follows:—

Patient suffering from constant vomiting. Pulse 150, weak and irregular. Vaginal discharge fearfully stinking, so much so that I dared not examine the patient per vaginam until I had sent for some carbolic oil in which to soak my hands.

The abdominal tumour is *specially* elongated, and reaches up *specially* high towards the ensiform cartilage. On palpation a peculiar crackling or crepitating sound is elicited over an area of about six inches square, commencing about two inches above the umbilicus and passing downwards. On observation friction could be heard in the peritoneal cavity, but no foetal heart sound. The abdomen on pressure felt tender, more especially on the right side. Above the upper edge of the tumour was an oval semi-resonant swelling, which appeared to be either the stomach or a portion of the colon, tensely filled with air. Temperature, 98°·4 per vaginam. Discharge foetid. The posterior wall of the pelvis very markedly pushed forwards and downwards towards its upper part, so as to narrow not only the inlet, but the cavity over a surface of at least two inches in depth of the back wall. Below this projection the back wall of the pelvis was very markedly retracted. The pelvis in other respects seemed altogether small, shallow, and contracted even down to the very outlet. The head presented at the inlet with the occiput to the left and anteriorly. The presenting part was obscured by a very large caput succedaneum. But it had not engaged in the brim, being still freely movable over it. The catheter was passed, and about a tablespoonful of bloody urine withdrawn.

I now at once proceeded to perforate, which was easily effected through the anteriorly placed portion of the right parietal bone. The head rapidly collapsed, with free escape of the cerebral contents, so that I found no use of a cephalotribe, which I had brought with me.

I however experienced great difficulty in bringing down the head, as the bones would not bear the necessary traction. After breaking down the greater part of the calvarium by bone forceps, I got the chin tilted down, and ultimately was able to get traction effected upon the neck, and thus to effect delivery of the body of the child.

The expulsion of the child was followed by a gush of stinking water and abominably putrid gases.

There was no bleeding, although I noticed that the uterus remained high up in the abdomen, and was apparently, though we afterwards discovered not really, ill contracted. The error in observation arose from the fact that the body and fundus contracted powerfully, and separated and expelled the placenta into the cervical portion of the organ, which had lost all power of contraction. The crepitation in the anterior aspect of the abdomen could still be felt.

Slight traction on the cord was sufficient to remove the placenta, and the vagina was now well washed out with water by means of a Higginson's syringe.

We now became aware that the actual amount of pelvic contraction was much greater than we had believed it to be before operation.

Owing to the contracted condition of the outlet, it was impossible to get the whole hand into the pelvic cavity. But so far as we could introduce the hand, we found that nowhere could we get three fingers abreast into it. It now appears that we never could reach the conjugate diameter on account of the narrowing at the outlet.

The diagonal conjugate measured  $3\frac{1}{2}$  inches.

The symphysis felt thick, and gave us the impression that we ought to subtract about three-fourths of an inch, and we accordingly came to the conclusion that the conjugate must measure about  $2\frac{3}{4}$  inches.

From the lower edge of the symphysis to the lower portion of the bulge in the back wall of the pelvis we made the distance 3 inches.

The pelvis was noticed to be contracted laterally, but it was further observed that the sacrum was markedly carried backwards at its middle third, and again bent forwards at its lower portion, the coccyx following the line of the lower portion of it.

The operation lasted forty minutes, and after its completion the pulse was found to be 156. Resp. 34.

At 3 P.M. the pulse had fallen to 126; but the respiration had risen to 30.

At 4 P.M. pulse 132. Resp. 30. Patient had a wineglassful of milk with lime-water, which she kept tolerably well.

At 9 P.M. pulse 132, feeble and now regular. She complained of severe pain in the right side of the abdomen from the level of the false ribs to the iliac region. Abdomen becoming tympanitic. Turpentine cloths to be applied, and thirty minims of laudanum to be given. I saw her myself at 11 P.M., and found her much as stated by Mr. Harrison at 9.

15th January.—At 9 A.M. pulse 130; temperature,  $57^{\circ}$ ; respira-

tion, 37. Has slept tolerably well over-night. Abdomen very painful and tender.

At 10.30 Dr. Playfair saw her, and found her as stated above, and besides noticed a somewhat doughy mass in the tender area, extending from below the ribs towards the pelvis on the right side. On light percussion this mass gave a dull note, but on deeper percussion a resonant one. No crepitation to be made out over the abdomen. Discharge not foetid, small in quantity. Mucous membrane of the vagina looks extremely dark in colour, and almost gangrenous. It was washed out with a solution of carbolic acid. The catheter was passed, and a teaspoonful of bloody alkaline urine removed.

At 12 noon the patient became delirious, and at 11.55 P.M. she died.

The child, independently of its loss of brain substance, calvarium, &c., weighed five pounds, so that we judged it must have weighed at least six pounds when entire.

A post-mortem examination was permitted, and was made by Dr. Wyllie forty-six hours after death.

The following were the main facts elicited :—

Abdomen greatly distended, and on opening this cavity the bowels were found to be very much inflated with gas, which distended enormously the large and small intestines, and also the stomach. Surface of the bowels somewhat congested. Peritoneum coated lightly with recent lymph. The uterus was *obliquely* situated with the fundus in the left iliac region. It measured 7 inches in length by  $4\frac{1}{2}$  inches in breadth. In the upper four inches of its length the surface was smooth, and its substance quite firm. In the lower three inches, however, the peritoneal lining was raised up in the form of a large loose bleb, of a dark purplish-blue colour, and filled with gas. At the lower part of this bleb, close to the anterior utero-vesical reflection of the peritoneum, there was a circular patch  $1\frac{1}{2}$  inches in diameter, covered with a thickish layer of recent lymph.

On removing the uterus with bladder and vagina attached, and laying it open by an incision traversing its whole length longitudinally, it was noticed that the placenta had been attached to the anterior wall. The area of its original attachment was round in shape, 5 inches in diameter, and covered with small adherent clots. The walls of the fundus, as also the internal aspect of the body of the uterus, which had not been covered with the placenta, were healthy. The muscular tissue was extremely thick ( $1\frac{1}{2}$  inches), pale and quite healthy-looking.

But the whole of the *cervical portion* of the uterus was very much ragged, torn, gangrenous, and quite *thin* and *membranous* in section. In its anterior wall there was a large tear about three inches in diameter, through which the finger could be passed into the sub-peritoneal bleb above described. The only lesion observable lower down was an oval opening about three-fourths of an inch in diameter

in its largest axis, which was situated transversely in the upper anterior third of the vagina, involving the structures of the bladder, so that vesico-vaginal fistula was established. It was not clear, however, whether this opening was not due to the removal of the tissues, or existed antecedently to the post-mortem.

We were able to secure the pelvis, which is now laid before you, and which presented the following dimensions, which were carefully taken by Mr. Rumney Illingworth :—

<i>Brim.</i>		<i>Outlet.</i>	
Conjugate . .	3 inches.	Conjugate . .	$3\frac{1}{8}$ inches.
Transverse . .	$4\frac{9}{16}$ "	Transverse . .	$2\frac{15}{16}$ "
Right oblique . .	$4\frac{3}{8}$ "	Right oblique . .	$3\frac{1}{8}$ "
Left oblique . .	$4\frac{3}{16}$ "	Left oblique . .	3 "
Circumference . .	$14\frac{5}{8}$ "	Circumference . .	$12\frac{1}{2}$ "

On inspection, it will be evident to the Fellows of the Society that the pelvis presents a very well-marked example of the pseudo-malacosteon rickety pelvis. We have, for example, an approximation to the stellate form of the inlet, a tolerably well-marked beaked promontory, descent of and rotation forwards of the upper part of the sacrum, permitting downwards and forwards displacement of the lower lumbar vertebræ, so that the junction of the bodies of the fourth and fifth lumbar vertebræ is nearly in the plane of the inlet, that is, in the position where the promontory of the sacrum ought to have been. The sacrum is also acutely bent at the junction of its second with its middle piece, the anterior and posterior surfaces of the remaining portion of that bone and of the whole of the coccyx being thus made to look nearly upwards and downwards respectively. By this condition of the sacrum, combined with narrowness of the sub-pubic arch, the outlet is extremely contracted. The effect of the oblique pull of the ilio-sacral and ilio-lumbar ligaments is well exhibited in the inward flexure, which it has produced in the posterior third of the iliac bones, which are thus made to assume a tolerably well-marked shovel shape. The true nature, however, of the disease is seen in the weight of the pelvis, and in its generally stunted appearance. The beak deformity deprives the antero-posterior diameter of about five-eighths of an inch of its actual dimensions, making the pelvis practically one of barely  $2\frac{1}{2}$  inches. The real conjugate at the true brim is  $3\frac{3}{8}$  inches, while the available conjugate is 3 inches.

With the view of ascertaining what changes, if any, in dimensions take place in the pelvis, as the result of maceration and drying, on the suggestion of Dr. Matthews Duncan, Mr. Illingworth fixed for me the exact points from which his original measurements were taken in the fresh pelvis, by means of driving pins into the bone. Measurements were again made after maceration and drying, with the following results :—



<i>Brim—</i>		<i>Before Maceration.</i>	<i>After Maceration.</i>
	Conjugate	. 3 inches.	Conjugate . 3 inches.
	Transverse	. $4\frac{9}{16}$ "	Transverse . $4\frac{1}{4}$ "
	Right oblique	. $4\frac{3}{8}$ "	Right oblique $4\frac{1}{16}$ "
	Left oblique	. $4\frac{3}{16}$ "	Left oblique. $4\frac{1}{16}$ "
<i>Outlet—</i>			
	Antero-posterior	. $3\frac{1}{8}$ inches.	Antero-posterior . $2\frac{1}{16}$ inches.
	Transverse	. $2\frac{1}{16}$ "	Transverse . $3\frac{1}{8}$ "
	Right oblique	. $3\frac{1}{8}$ "	Right oblique . $3\frac{1}{4}$ "
	Left oblique	. 3 "	Left oblique . $3\frac{1}{8}$ "
<i>Circumference at the Brim—</i> Before maceration, $14\frac{5}{8}$ inches; after maceration, $14\frac{1}{8}$ inches.			

It will thus appear that at the brim there is no appreciable change in the conjugate diameter, whilst there is unmistakable diminution of the transverse, as also some, though not so great, in both oblique diameters. There is contraction at the outlet, as a result of drying and maceration, in the antero-posterior, but both oblique and transverse diameters are greater than in the fresh pelvis. It appears to me that these results tend to show that this appreciable diminution in the lateral and oblique capacities of the pelvis at the brim are referable to drying and shrinking of the cartilaginous structures connecting the bones of the pelvis to one another anteriorly and posteriorly, but that the osseous tissues do not contract to such an amount as can be made evident by measurements. The widening in the transverse and oblique directions, which would appear from the measurements to have taken place at the outlet, seem to me to be due to the loss of the fibro-cartilaginous tissues covering the inner aspects of the ischial tuberosities, and the spines of the ischium, as also to breaking off of the extreme points of the latter osseous projections. How to explain the slight contraction in the anterior dimension of the pelvic outlet, I confess myself at a loss, except it may have arisen from change of curvature in the coccyx, through drying of its cartilaginous attachments.

The cases that we have been considering present us with instructive examples of rupture of the uterus in its cervical portion, and accordingly I shall follow them with a few remarks upon the subject generally.

Thanks to the labours of many obstetricians, among whom, however, Braune,\* Bandl,† and Litzmann‡ deserve to be singled out specially for their recent contributions to the physiology and pathology of the cervix during parturition, we are now in a position to explain with tolerable certainty the mechanism by which this accident arises. That being so, we are a long way on the road to establish a

\* "Homolographic Sections." Leipzig, 1872.

† "Ueber Ruptur der Gebärmütter und Ihre Mechanik." Wien, 1875.

‡ "Das Verhalten des Cervix Uteri unter der Geburt," *Archiv für Gynäkologie*. Bd. X. s. 410.

rational prophylaxis, and thus in a considerable proportion of cases to be able to prevent and avoid its occurrence.

Indeed, the removal of rupture of the uterus out of the region of utter uncertainty in which it has been wont to hover hitherto is a most valuable step in the progress of recent obstetrics.

For, as rupture of the cervical portion forms nearly the whole of the cases of uterine rupture, seeing that both experiment and clinical observation agree in leading us to the conviction that spontaneous rupture of the body or fundus is impossible if the uterine tissue is healthy, if we have fully mastered the mechanism by which cervical rupture is brought about, we have been able to explain the great bulk of all cases of uterine rupture. Likewise, if we can anticipate and prevent the great bulk of cervical tears, we can anticipate and prevent most ruptures of the uterus.

Let me, therefore, try to place before you the present state of our knowledge of the ordinary process by which this terrible accident arises.

From a glance at Braune's lithograph of his famous homolographic section now laid before you, the very great amount of distension and thinning to which the cervix uteri is subjected during an ordinary labour is made abundantly evident.

It is there shown that the cervix of the latter months of pregnancy, whose cavity before dilatation has a variable but inconsiderable transverse diameter, and a longitudinal measurement of  $1\frac{1}{2}$  to 2 inches, is converted, during the preliminary uterine contractions that precede ordinary labour-pains and during the operation of the period of the first stage of labour, into a tube, whose length is not less than  $4\frac{1}{2}$  inches, and whose transverse diameter is as great as its length.

It requires no argumentation to prove that such a result can only be brought about by coincident thinning and stretching of the cervical tissues, and must inevitably be accompanied by weakening of the uterine walls in its cervical portion. The cervical segment of the dilated genital passage must therefore be regarded as in itself a weak section of the canal. This distension and thinning of the cervix is brought about by the action of the uterus in its twofold manner, as pointed out by Luschka. That double action is—

1st. The power which the uterus has to propel its contents forwards.

2nd. The power which it possesses to retract itself over its own contents.

The first of these effects is chiefly due to the contraction of the outer layers of longitudinal muscular fibres which surround the organ as with a hood, and diverge from it laterally and anteriorly towards the sides of the pelvis into the folds of the broad ligaments and into the round ligaments. The second effect, again, is due especially to the result of the contraction of the middle and internal layers of

uterine muscles by which the walls of the uterus are thickened and shortened in all directions.

When the mutual relations of all the parts concerned are normal, the distension of the cervical canal so as to form a segment of the distended genital passage, and the advance of the foetal head to occupy that segment, and to thus pass into and through the pelvis, follow a law of parallelism, or take place simultaneously.

But if from any cause the outer os is not dilated in proportion to the rest of the cervix, or if, although it be dilated more or less completely, the retraction of the outer os over the child's head is prevented, in consequence of the cervix being caught and impacted between the head of the foetus and the inlet of a tight pelvis, then, as shown abundantly by Bandl and by Litzmann, the cervix being subjected to the prolonged action of the pull of the powerful uterine muscles, is liable to be distended to a dangerous amount.

The rate at which this over-distension proceeds, and the risks that may be expected to follow in its train, depend greatly upon the degree of pelvic contraction, the strength of the broad and round ligaments, and the tension of the abdominal muscles, including, of course, the diaphragm.

A moderate degree of pelvic contraction, and along with it the condition of multiparity, favour such an accident, for it is only in cases where the pelvic contraction is not too great to allow the head to partially enter the brim, that the cervix can get wedged in between the head and the pelvis, whilst also a patient whose uterine pelvic attachments have been severely put to the test in a former difficult labour, is more likely to suffer from the injurious effects of over-distension of them than one who has never before been in labour, and whose uterine ligaments and whose abdominal walls have never previously suffered from the relaxing effects of over-distension.

Suppose, then, the abdominal walls are imperfect in their powers of resistance, and the uterine ligaments have on one or more occasions been severely stretched, then the accessory aids to the support of the cervix against injurious distension in the longitudinal direction are imperfect, and it is very especially liable to be torn.

On the other hand, a very high amount of pelvic contraction is really not so likely to end in spontaneous rupture as a moderate amount of it, as the head being in the former case unable to descend into the pelvis, cannot in that way maintain so readily that dangerous amount of distance between the superior and inferior limits of the cervical segment as when the pelvis allows the head to descend to a certain amount, and thus to carry before it the outer os uteri, as well as to fix the cervix between the head and the pelvis in the neighbourhood of the outer os.

It is thus apparent that the main factors in the production of cervical rupture are the yielding of the uterine pelvic attachments and weakened action of the abdominal muscles in the face of some obstruction to the onward advance of the ovum.

This obstruction may and does arise from very various causes. The principal among them are deformed pelvis, extreme rigidity of the outer os, obliquity of the uterus, so as to make the head project against the back wall of the pelvis, and thus spend its power in dilating and distending the cervix in its posterior aspect, the great bulk of a hydrocephalic head, or the existence of a transverse presentation.

In the two cases under consideration, this distension would appear to have taken place to such an extent as to induce gradual death of the tissues. It will be noticed that Dr. Wyllie states that in the case of C. W. the cervix was reduced near the rupture to the condition of being thin and membranous, and it can also be seen in Dr. Hair's case that the anterior wall is in some parts near the tear reduced to the thinness of parchment.

This thinning and elongation of the cervix is in head cases accompanied by morbid elongation of the uterus, as was noticed and recorded in the case of C. W. This high position of the fundus is commonly combined with a marked amount of obliquity of the uterus in consequence of the one shoulder of the child being usually pushed more forwards into the weakened and dilated cervical segment than the other. I well remember still a case that fell under my observation in December, 1870. The patient lived in the West Port, and was confined at the period referred to of her seventh child. Her previous labours had been natural. But in this case, besides having to deal with a very severe and difficult delivery, matters were complicated by partial placenta prævia. The bleeding, however, which was never serious, soon ceased altogether. But, though the pains were long and powerful, the head would not enter the brim. I tried forceps, but could not get the head to engage. I next attempted to turn, but, though it was by no means difficult to seize the feet, no power that could be exerted with safety to the mother could effect version. I then asked and received the able assistance of Dr. Matthews Duncan, who made similar and equally unsuccessful efforts at delivery. At his suggestion, I then perforated the head, when the delivery was speedily effected. The child was a specially large female. Careful examination after delivery led both Dr. Duncan and myself to the conclusion that the patient's pelvis did not measure more than  $3\frac{1}{2}$  at most in the conjugate of the brim. It was also noted at the time that the uterus was very markedly elongated, and that it presented a very pronounced example of right lateral obliquity. This case, I feel very sure now, was one of those threatened cases of rupture, with extremely distended cervix. The cervical zone had lost its contractility, whilst an elongated fundus and body still retained and grasped with tetanic energy the great mass of the trunk of the fetus. Under such conditions, turning is apt to be extremely troublesome, and even, as pointed out by Bandl, to be so difficult to execute as to lead to dislocation of the child's limbs in ineffective



efforts to complete it. The force of the operator is under such conditions brought to bear upon the brim of the pelvis and that side of the uterus which is least retracted upwards.

Bandl has pointed out that in ordinary circumstances, whilst the head is entering the cervix and distending the outer os, which may be deeply situated meanwhile in the true pelvis, the upper limit of the cervix can be made out just above the level of the pelvic brim.

But in those cases in which there exists over-distension of the cervical segment, its upper limit may be made out as high as within two or three finger-breadths below the umbilicus.

This limit may be made out as a transverse or more or less oblique furrow. This observation I have had opportunity to verify, but more especially on Sunday last, when I had to deliver instrumentally a primipara, of rather advanced years, of a child, whose head was far above the average size. Its diameters were—occipito-mental, 7 inches; occipito-frontal, 5 inches; bi-parietal, 4 inches; and bi-temporal,  $3\frac{1}{2}$  inches. I observed that in this case the head was only able to enter the brim transversely, so that practically, though the conjugate measured after delivery 4 inches, the pelvis was abnormally small for the head. The first stage was long, and the pains remarkably powerful. Even before the membranes ruptured, I noticed a tendency in the cervix to over-distension, and after the waters had been discharged for some time, I was able to demonstrate to Dr. Playfair and the pupils who assisted me, that the upper edge of the distended cervix was situated fully a hand-breadth above the upper edge of the symphysis. I ought to remark that in this patient's case the outer os was abnormally rigid. We had, therefore, here the conjunction of two forces tending to favour over-distension of the cervix—viz., disproportion between the pelvis and the head, and rigidity of the outer os, not to speak of the actual over-distension which the very great size of the head itself would necessitate.

The line of separation between body and cervix is not the only distinction, however, nor is it the chief differentiating point. During the interval between the pains, the body and fundus feels thick and soft, making it difficult to recognise the parts of the child through the uterine wall, whereas in the cervical segment of the uterus the parts of the foetus feel in dangerous proximity to the examining hand. During a pain, again, the body and fundus feel hard, thick, and rigid, whilst the cervix feels tight and thin.

This extreme distension and thinning of the cervical segment of the genital passage under various conditions that tend to produce it in a specially marked manner, is well indicated in the drawings before you, which have been copied by me from Bandl's lithographs. I am satisfied that these drawings exaggerate the condition of matters considerably, but I am equally well satisfied that the exaggerations are in the right direction, and that Bandl's views are essentially correct.

At any rate, there is the best evidence before us to prove that in the case now under consideration there did exist a very abnormal amount of cervical distension before the rupture occurred. It is also worthy of notice that the rupture of the cervix occurred in both cases under conditions that were unfavourable for its production. We had in both cases a very considerable amount of pelvic contraction; and the patients were both primiparæ. This, no doubt, explains the very long continuation of labour in both cases before the tear took place.

There is no evidence that in either case there existed any perforating injury through pressure of any projecting part of the pelvis against the uterine wall. It appears that the projection in the left pubic ramus only acted as fixing down the left edge of the cervix more firmly than usual, as at that point the vaginal portion of the cervix had all but disappeared.

The common belief that rupture of the over-acting body or fundus may result from a long-delayed labour, receives no support from the dissections in either of these cases. In fact, the post-mortem appearances flatly contradicted the assumption. Thus, the body and fundus in the uterus laid before you are seen to be healthy, though the cervix is much torn; and in the other case, though the cervix was torn to tatters, the body and fundus were found perfectly healthy. At the sectio Dr. Wyllie remarked specially upon the healthy condition of the mucous membrane of the body of the uterus, and observed that it compared so very markedly with that of another uterus, which we had examined together a few days previously, in which the inner lining of the organ had assumed a somewhat diphtheritic character. These facts tend to establish more and more decidedly the result arrived at by Dr. Duncan from actual experiment—viz., that spontaneous rupture of the healthy uterus in the body or fundus of the organ is, so far as can be judged, impossible.\*

The tear of the cervix in regard to its direction will, of course, vary in proportion to the causes that determine the lesion, and the direction of the fibres that first give way. From the fact that the pervading influence that determines the tear acts longitudinally upon the cervical segment of the uterus, it follows that the prevailing direction of such ruptures must be circular, that is, must arise at right angles to the direction of the traction which causes it.

But if, with the traction which the body of the uterus exerts upon its cervical segment, there is conjoined the propulsion of a specially large segment of the ovum into the cervical cavity—say in the case of a hydrocephalic head—then there may arise a transverse strain or distension of the cervical tissues that will produce a longitudinal tear.

Indeed, in Dr. Hair's case there was, and it is not uncommon to

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\* "Mechanism of Normal and Morbid Parturition," p. 95. Edinburgh, 1875.

find it so, a compound tear, the two elements of which were nearly at right angles to one another.

There is another kind of cervical rupture that I have not as yet adverted to. I mean those cases in which the slight ruptures of the vaginal portion of the cervix, which happen probably without exception, in all first cases, pass too deeply and involve the supra-vaginal portion of the distended cervix more or less seriously.

The mechanism of this kind of tear is extremely simple, and merely indicates severe transverse distension of the outer os, whether that arises spontaneously or is the result of operative interference.

There is still another form of rupture due to long-continued pressure of the cervix against a projecting portion of the pelvis. In that case the perforation is usually slight, but the uterine tissues for a considerable distance around are found to be seriously bruised and squashed up.

The conditions that give rise to this form of cervical lesion are—acute curvature of the sacral promontory with the child's head pressing against it under the influence, for a considerable time, of the contractions of an anteverted uterus.

From the above remarks it must, I think, be evident that rupture of the uterus follows as a result of clearly appreciable laws and forces, and is preceded by demonstrable premonitory signs, which, if taken into account in time, would form the basis for an appropriate preventive treatment. This, however, is beyond the scope of my present paper. But I hope to make the symptoms and treatment of this accident the subject of a future contribution to the Society.

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## Obstetric Summary.

### *The Operative Treatment of Abdominal Fœtation.*

In the *Archiv für Gynäkologie*, Band xii. H. 1, Professor Gusserow relates a case of extra-uterine fœtation in which secondary gastrotomy was successfully performed. The patient was thirty-four years old, and was admitted on October 30th, 1876. She had previously had four children, the last in 1875. The last delivery was followed by para- and perimetritis, from which, after three weeks' illness, she completely recovered, the effusion becoming absorbed. In May, 1876, she was attacked by rigors, vomiting, and abdominal pain, so severe that she was admitted into hospital, where a diagnosis of acute gastric catarrh was made. Meanwhile, menstruation came on normally for the last time on May 27th. After this, she was treated in the hospital for five months for peritonitis. She had severe pains, persistent vomiting, difficulty in micturition and defecation, and the abdomen became enlarged. In July, she became aware that she was pregnant. After two months her condition began to amend, and she left the hospital at the end of September, though still very weak. On October 28th she strained herself in lifting a pail, as a result of which she had prolapse of the vagina and slight hæmorrhage. In

consequence of this she came under observation, and the signs of extra-uterine pregnancy were then made out. The parts of the child were extremely superficial and its movements distinct, and its position being generally rather transverse, the head towards the right. The uterus could be felt in front, enlarged, and reading 3 or 4 centimetres above the pubes. The cervix was pushed forwards and upwards, and behind it was a firm tumour. On December 2nd, she was suddenly attacked by severe pains, the movements of the foetus became violent and painful, and its position was for a time somewhat altered. An hour later she was free from pain, but the foetal movements and heart-sounds had finally ceased. The sound was then introduced into the uterus, and its length found to be 10 centimetres. For the next eighteen days the size of the abdomen gradually diminished, and the patient's condition was favourable. On December 20th, some pain and hæmorrhage commenced, and on the 24th, amid severe pains and considerable loss of blood, a decidua, whose nature was verified by the microscope, was expelled from the uterus. About twenty-four hours later severe symptoms of peritonitis suddenly came on; and after a few days the size of the abdomen had increased, and fluctuation over the limits of the tumours became more distinct than it had ever been previously, while the retro-uterine tumour had also increased.

After being in imminent peril of life, the patient somewhat improved in the early days of January, 1877. Her condition, however, was still so threatening, that gastrotomy was performed on January 7th. The abdominal walls were easily separated from the thin and transparent foetal sac. When this was incised, a large quantity of sero-sanguineous fluid escaped, of which 900 grammes were collected. The foetus was easily removed, and slight traction on the funis showed the placenta not to be quite firmly adherent. It was situated below and to the right, reading deep into Douglas's fossa. A part of the sac on the left side, which was not adherent, was united by cat-gut to the abdominal wall. The lower part of the wound, for a length of 5 centimetres, was left open, and a drainage-tube, and some strips of gauze left in it by the side of the funis. The operation was performed under carbolic spray, lasting less than thirty minutes, and the patient lost very little blood. The sac was sponged out, and two large old clots removed from it. The foetus, a female, was macerated, but not offensive. It was 44 centimetres long, and weighed 1750 grammes, and was well-developed, corresponding to about the eighth month of pregnancy. For two days the patient did well, but on the third day, in spite of carbolic injections, and although the operation had been performed under spray with antiseptic precautions, decomposition commenced in the cyst, and high fever set in with it, the temperature rising to  $40^{\circ}5$  C. The cavity was syringed out twice a day with strong solutions (as high as 10 per cent.) of carbolic acid. From the fourth day onwards, fragments of decomposing placenta were removed by forceps, and the retro-uterine tumour thenceforward gradually diminished. Once severe hæmorrhage followed the removal



of a piece, and plugging of the sac became necessary. The gut sutures gave way easily, and by the fourth day the whole sac lay freely open. When Douglas's pouch had been freed from placenta, on the ninth day, it was punctured from above, and a drainage-tube passed through into the vagina. The febrile conditions, however, appeared to become rather worse in consequence, and a few days later the pulse rose to 160, and the collapse was so great as to call for ether injections. The discharge, however, was gradually transformed into healthy pus, and the patient slowly improved, although, for a long time, the urine contained albumen. By the 27th of March the cavity had closed, and she had already been able to leave her bed on the 20th of February. Meanwhile, however, a phthisis of the right apex, of which there had been slight signs from the first had made rapid progress, and beneath the clavicle there were signs of a cavity.

The author reviews the evidence hitherto extant as to the operative treatment of abdominal foetation, although he considers that the cases are not to be weighed in proportion to their numbers, especially now that such advances have been made in abdominal surgery. In 1872 Keller quoted nine cases of primary gastrotomy, during the life of the child, out of which seven children and four mothers were saved. Parry, in 1876, recorded twenty cases of a similar kind, out of which eight children and six mothers are said to have been saved. Since then has been recorded a case of Gaillard Thomas, in which the mother was saved and the child died during the operation; also that of Mr. Jessop, in which both mother and child were saved. Of secondary gastrotomies, after the death of the child, Parry records sixty-two, with thirty-two deaths. Since then operations have been recorded by Cullingworth, Depaul, Boinet, and Duboué, of which only one, that of Duboué, had a successful result. Of cases left to nature, Parry records 247 in which the full term of pregnancy was exceeded, with 125 deaths and 122 recoveries. The great peril of extra-uterine foetation in its latter stage is shown by the fact that in forty-one cases in which the child lived up to the ninth month of pregnancy, and in which the treatment was expectant, there were thirty-six deaths, while in seventeen similar cases, treated by operation, there were nine deaths.

In view of the frequency with which, in the later months of foetation, the child suddenly dies, and this occurrence is followed by partial detachment of the placenta, internal effusion of blood, peritonitis, and great danger to the mother, the author concludes that, as soon as the eighth month of pregnancy is reached, interference by gastrotomy should not be delayed. In case of the death of the foetus he would also operate immediately, before the setting in of those phenomena of false labour, which do not generally occur for a few days. If, however, this opportunity has been let pass, he would decide according to the condition of the patient, and only operate if the issue is likely to be otherwise unfavourable. He believes that the result of operation will be much more favourable when it is

undertaken earlier, and not as a last resort, when life is already in extreme danger. Although the author operated in this instance under carbolic spray, influenced by the exigencies of the present fashion, he concludes, from the experimental researches of Wegner as to the effect of carbolic acid upon the peritoneum, that it is undesirable in gastrotomy to use the spray.

A case of primary gastrotomy for extra-uterine foetation is recorded by Dr. Gervis, in the *British Medical Journal* for December 22nd. The patient had had eight children, the youngest being a little over two years old. During the last menstruation, ending February 28th, 1877, she had unusual pains with vomiting. Since then, up to seven weeks before her admission on August 27th, she had had, every eight or nine days, an attack of uterine hæmorrhage, accompanied with more or less sickness and abdominal pain. The body of the uterus was made out in the left inguinal region. Per vaginam, a rounded swelling was found occupying more than the right half of the pelvis and pushing the uterus to the left. It was continuous with a dull and resistant area above the pubes, over which a soufflé could sometimes be heard. This was presumed, and, as the event proved, rightly, to be placenta. The foetus was situated towards the left side; the heart-sounds were most distinct just above, and two inches to the left of the umbilicus.

On September 27th, the patient had a severe attack of vomiting, with great abdominal pain, increasing especially with all foetal movements, which from this time became excessive, appearing to threaten the rupture of the cyst.

Gastrotomy was performed on November 5th, the patient being rather more than eight months pregnant. The foetus proved to be enclosed only in the membranes, which were very thin and lacerable. In extracting the child by the head, the opening in the cyst was extended very near to the front edge of the placenta. Some hæmorrhage occurred at this point, but was checked by two ligatures. The lower part of the cyst was included in the sutures passed through the abdominal wall, but with little hope of their holding on, on account of the soft and thin character of the cyst wall. The funis was brought out at the lower angle of the wound, and a large-sized india-rubber drainage-tube placed by its side, reaching to the bottom of the cyst and covered by a carbolised sponge. The child could be induced to breathe only with much difficulty, and died about six hours after its birth.

On the day after the operation the patient had some vomiting, and reddish serum was repeatedly withdrawn from the drainage-tube, some also having escaped by the side and soaked the dressings. At 9 P.M. this had, for the first time, a somewhat offensive odour. The following morning the pulse was 140, temperature 102°·5. A considerable quantity of bloody serum continued to escape and saturate the dressings. At 2 P.M. the abdomen was distended, and from this time till her death, at 7 P.M., she gradually sank, the sanguineous discharge never abating.

At the autopsy there were found some few patches of peritonitis, and in the cavity was about a pint and a half of sanguineous serum. The placenta was in such an advanced state of decomposition that its exact attachment could not be ascertained. The right ovary could not be found, but both Fallopian tubes were normal. The uterus measured  $7\frac{1}{2}$  inches in length, the lining mucous membrane was shreddy and partially detached. The author considers that death was due to hæmorrhage, caused by partial detachment of some portion of the placenta.

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*Parturition Obstructed by Carcinoma of the Cervix Uteri.*

In the *Archives de Tocologie* for December, 1877, is related the case of a patient, thirty-seven years of age, in whom pregnancy was complicated by encephaloid cancer of the whole circuit of the cervix, as well as of the vaginal walls. She had previously had five children, the last six years previously. Since the last delivery, menstruation had been painful. Emaciation had been progressing for two years. The last period occurred on March 3rd, 1877, and no discharge, either sanguineous or leucorrhœal, took place until the third month of pregnancy. At that period, slight hæmorrhage took place for three days. It recurred a fortnight later, and was followed by a slightly sanguineous, non-fœtid discharge, which was continuous for three weeks, and afterwards reappeared on the slightest provocation. The patient was admitted into hospital under M. Depaul on August 22nd. Emaciation had then become extreme. There was a loud anæmic bruit in the carotids and over the heart, and she was suffering violent lumbar pains. The uterus was found to correspond to about five months' pregnancy. The finger introduced into the vagina was arrested by an irregular bossy mass, readily bleeding, which proved to be the anterior vaginal wall invaded by cancer. The whole circuit of the vagina was occupied by prominent cancerous masses, which rendered it difficult to reach the cervix. The cervix itself was degenerated in its whole circuit. The enlarged anterior lip was separated from the posterior by a deep cleft. After a fortnight the patient left the hospital, but returned on October 9th, the cancerous masses being in much the same condition. A sanguineous discharge continued, but had not much smell. On the morning of October 29th, that is to say, in the middle of the eighth month of pregnancy the membranes ruptured, and vigorous pains soon followed. The same evening no alteration could be discovered in the condition of the cervix. On the morning of the 30th the head remained above the superior straight; the fœtal heart was becoming slow and irregular. The pulse was 116, temp.  $40^{\circ}0$  C., but the patient's condition did not seem to call urgently for interference. M. Charpentier, who was representing M. Depaul, thought it advisable to wait, having experienced the bad results of operative interference in such cases from laceration of cancerous tissue. In the evening the uterine contractions, becoming progressively more powerful, had at length pro-

duced a slight dilatation of the external os, which had the diameter of a five-franc piece. The cervix formed a canal two centimetres in length, the internal os being somewhat less dilated than the external. The foetal heart-sounds could no longer be heard. On the morning of the 31st the head was found at the vulva, and a dead foetus was expelled at 8.30 A.M., after a labour of forty-five and a half hours. It weighed 2080 grammes. No hæmorrhage occurred after the expulsion of the child, or after that of the placenta, which took place normally. After delivery pulse and temperature did not rise again to the level reached during labour, and convalescence took place favourably. On November 2nd the discharge became so foetid that the ward where the patient was had to be emptied, and antiseptic injections were of little avail to modify this condition. On November 5th hæmorrhage took place to the amount of 500 grammes, without apparent cause. The vagina was syringed with a weak solution of perchloride of iron, and plugged with tampons dipped in a stronger solution. The pulse was 120; temperature  $38^{\circ}9$  C. On the 7th the hæmorrhage had almost ceased, but the foetor of the discharge continued. From this time she progressed, but still continued in a state of great weakness. On her departure from the hospital on November 28th, it was ascertained that the cancerous masses were in much the same state as before delivery, except that laceration had occurred, producing deep clefts at several points in the circumference of the cervix.

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#### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

"Notes of a Case of Extra-Uterine Gestation." By Henry Gervis, M.D., F.R.C.P.

"Ovariectomy by Enucleation." By Julius F. Miner, M.D. Philadelphia: 1877.

"Studien über die Uterusschleimhaut während Menstruation, Schwangerschaft, und Wochenbett." Von Dr. Gerhard Leopold. III. Theil. Leipzig: 1877.

"New Pessaries." By E. C. Gehrung, M.D. St. Louis: 1877.

"Lacerations of the Cervix Uteri as a Cause of Uterine Disease." By W. H. Baker, M.D. Cambridge, U.S.A.: 1877.

"Notes on Pleuritic Effusion in Childhood." By Thomas Barlow, M.D., and Robert W. Parker.

Communications received from Dr. Matthews Duncan, Dr. Aveling, Prof. Stephenson, Mr. W. Adams, Mr. J. Knowsley Thornton, Dr. Young (Florence), Dr. de Gorrequer Griffith, Dr. Ashburton Thompson, Dr. F. W. Newcombe, Dr. Paterson, Dr. Berry, and Dr. J. Williams.

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Original Communications.

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ON THE MECHANISM OF LABOUR.

By WILLIAM STEPHENSON, M.D., F.R.C.S.E.

Regius Professor of Midwifery in the University of Aberdeen.

*(Continued from p. 653.)*

IN the passage of the head through the first portion of the parturient canal, that is, till it reaches the floor of the pelvis, the normal movement is one of translation combined with rotation, whereby the chin-flexion is increased. At times, however, the nature of the movement is changed; it may be that of translation only without rotation, or the direction of the rotation may be reversed, and the chin be extended instead of flexed. These movements have hitherto been explained by regarding the forces as acting on the antero-posterior diameter of the head, as a lever. This argument we have seen to be erroneous and false. It is wrong in assuming the lever to be divided into two arms, with a constant relation one to the other; and false in regarding the forces as acting in opposite and parallel directions. The subject requires reinvestigation; at least it remains to be shown how the principles we have laid down are to be applied in the elucidation of the subject.

When the direction of the uterine axis and the diameters of the pelvis are normal, the movements of the head, in this part of its course, are influenced only by the soft parts. First therefore may be taken, as the simplest problem, the

head unrestrained by the bony pelvis, the resistance being from the soft parts only.

We may assume that the tensile resistance of the soft parts is equal all round, that they therefore offer an equal pressure on the anterior and posterior surfaces of the head.

In the normal position at the brim the transverse plane of the head is parallel with that of the brim: and the axis of the inlet and of the uterus passes through the sagittal suture. As the head is also bilaterally symmetrical, we may assume that the resultants of the forces, uterine and resistant, act in one plane, the sagittal plane of the head.

The next step is to determine the direction of the forces. Regarding the *uterine force*, the error, already pointed out, that it is mainly transmitted through the foetal spinal column, has hitherto prevented a correct opinion being formed, and is the cause of the confusion of ideas that prevails on the subject. I hold that it must be taken as a primary principle that the resultant of the uterine forces always coincides with the axis of the uterus. Theoretically the latter is regarded as coinciding with the axis of the inlet, but actually it is constantly subject to deviations. It is usually inclined at an angle to the right of the pelvic axis, and from the mobility of the uterus it may change from time to time according to the position of the patient.

The resisting forces may be resolved into two resultants, the one acting on the forepart of the head—the anterior—and the other on the posterior. Previous writers have regarded them as acting upwards parallel to each other, and to the uterine resultant. This is a mistake. Were the medium through which the resisting forces are exerted a fluid, we know that the direction of the pressure would be exactly perpendicular to the surface on which it acts. Although not a fluid, yet from the nature of the soft parts we may safely assume that the direction of the forces will not be parallel, but inclined at an angle, so that they will intersect if produced. Nor shall we be far wrong if we take as our guide the perpendicular to the surface at the point at which they act. When pressure arises from a solid or rigid body the direction is perpendicular to its surface. The only

disturbing influence is that of friction, but, as the surfaces may be regarded as freely lubricated, the amount is small, and may be neglected without leading to any inaccuracy.

Here I would embrace the opportunity of taking exception to the use of the term *friction*, which has crept into obstetric writings. It is employed by many in a totally wrong manner, and made to be synonymous with pressure or resistance. The amount of friction is certainly dependent upon that of pressure, but they are totally distinct forces, the direction of the first being tangential, that of the latter perpendicular. Friction therefore should never be employed with the appearance of scientific accuracy to express the force of pressure or resistance.

The subject is now resolved into a simple mechanical problem. Given a solid body under the influence of three forces acting in the same plane, what will be the nature of the movement? If the three forces all meet in a point there will be no rotation, if movement occurs it will be a simple translation. If two of the forces meet in a point, and a third passes to one side or the other of that point, then rotation will take place. The direction of the rotation can be readily recognised by the direction of the forces. There is not a single resultant, but a force and a couple.

Applying this to the mechanism under consideration, we have, in the sagittal plane of the head, the anterior and posterior resultants so directed that they will meet in a point. If the uterine resultant acts in the same plane, and passes through the point of intersection, the head can only move by simple translation. If, however, it does not pass through the point, but somewhere between it and the occiput, then the head in its descent will rotate so as to flex the chin. If the uterine resultant passes between the point and the forehead, then the forepart will descend first.

By examining the form of the sagittal plane of the head, in its ordinary position, say the one lip covering the anterior fontanelle, the other at the hinder-part of the sagittal suture, and the uterine axis exactly situated in its theoretical position, so that it will pass through the centre of the os, it will be found that the anterior and posterior

resultants will meet anteriorly to the line of the uterine resultant, and hence the occiput leads, the chin-flexion is increased.

But when the head has originally a greater degree of chin-extension, or if the direction of the uterine resultant be abnormal, then the relations are liable to be reversed, so that the rotation will be in the opposite direction. As the forepart of the head near the anterior fontanelle is more compressible than the posterior part, the effect of its yielding to the pressure will be to throw the point of intersection of the resisting resultants more to the front. There is thus an arrangement to insure the normal rotation. It can readily be seen, however, that even a very slight deviation of the axis of the uterus from the normal may derange the mechanism, and cause the forehead to descend.

In practice it is impossible for us to determine the exact direction of the forces, so as to enable us to infer what the movement will be. But we can readily reverse the process ; we can, by observation, determine what is the nature of the movement, whether the occiput or the forehead tends to lead, and deduce therefrom the direction of the resultants. If the chin is being extended, we may be sure that the uterine resultant is anterior to the point where the resisting resultants intersect, and *vice versa*. Nay, more, it is within our power, either by pressure from below, to change the direction of the resisting forces ; or by change in the position of the patient, so to alter the direction of the uterine resultant as to increase its power in producing rotation, or change the direction of the rotation.

At present my purpose is to lay down general principles. I shall not, therefore, delay by endeavouring to apply them to special cases. As yet the influence of the soft parts only have been considered, and the above principles apply only to cases where the relative proportions of the pelvis and head are such, that in the descent of the latter, through the first portion of the canal, the movements are not specially influenced by the bony parts.

The next point to be examined is, how our principles are to be applied to cases where, from contraction of the pelvis,



or otherwise, the resistance of the skeleton modifies the mechanism?

In the uniformly generally contracted pelvis it has been recognised that the ordinary mechanism is exaggerated; that is, that the degree of chin-flexion is increased, so that the occiput rather than the vertex leads. In the flat pelvis again the forepart of the head frequently descends first, until the head has passed the contraction. Some authors have, I think, too hastily assumed that this difference of the mechanism between a flat and generally contracted pelvis is constant. It has been given as a means of determining the character of the pelvis. It is true that when the pelvis is generally uniformly contracted, the head can only pass in the way described; but it is not true that in the flat pelvis the forepart always descends first. It frequently does, but there is no reason why the mechanism may not also be the same as in the other, with the occiput first. In this form, whether the forepart or the hind-part will lead, depends on other conditions than that of the form of the pelvis.

Authors are by no means agreed in their explanations why in the flat pelvis, in certain cases, the forepart of the head descends first. There is much confusion in their opinions, arising from two causes. The one is the use of the inappropriate lever argument, the other is the error of regarding the uterine force as mainly exerted through the foetal spinal column, and that therefore it always acts at the occipito-atlantoid articulation. Having disposed of these errors, and taking as the leading principle that the uterine resultant always corresponds with the axis of the uterus, the stumbling-block is removed, and a simple solution of the problem readily obtained.

Given the head arrested in a contracted conjugate, advance can only be made by a rotation round the axis lying between the pubis and the promontory. These points are taken theoretically, in actual cases the anterior point is often not strictly the pubis. At present I leave out of consideration a possible movement, where only one point is fixed, and a rotation occurs whereby the sagittal suture is made to approach or recede from the promontory. It

renders the problem more simple to take both points as fixed.

Movement can only occur by rotation around the fixed axis. If the uterine resultant passes through this axis, no rotation can occur. But should it pass between that line and the occiput, then the hind-part will descend, till a third point becomes fixed. Under such circumstances the forepart cannot first descend. Again, should the uterine resultant pass between the fixed axis and the forepart of the head, the rotation will occur in that direction, the forehead will descend first, the occiput cannot. Under such circumstances, if the pelvis be generally contracted, the face is at once arrested on the side of the pelvis ; but if there be sufficient lateral room as in a flat pelvis, rotation may continue, and the forepart be made to lead.

Such is the simple explanation of the mechanism of contracted conjugates.

The above theoretical examination of the mechanics of parturition, imparts to the direction of the axis of the uterus a greater importance than has yet been accorded to it. It has long been recognised that any marked deviation, such as in a pendulous abdomen, deranges the mechanism and impedes the progress of labour, but a slight change in the direction of the axis has not been regarded as a cause of delay. Nor that under certain circumstances a lateral deviation is essential for the expulsion of the child. Theoretically we have seen that such is the case, and our knowledge will enable us to direct our aid with a greater certainty than we have as yet possessed.

Every midwife is familiar with the fact that a change in position of the patient will often facilitate a tedious labour. But the change is made at haphazard, the effect is fortuitous. When, in a case of pendulous abdomen, a binder is applied and the patient is laid on her back, the treatment is based on scientific knowledge, and the certainty of success insured. On theoretical grounds, I feel confident that a tedious first stage is often due to *slight* deviations of the axis of the uterus in cases where hitherto *rigidity* of the os has been the only supposed cause. It is a subject which is capable of proof by

direct experiment, and to which on a future occasion I may return. When the dilatation of the os has to be completed by the head, the facility with which this is accomplished is dependent in many cases upon the nature of the movement imparted to the head. When the forces so act that the movement is one of translation only, there is an increased tendency to produce longitudinal stretching of the cervix; but when the rotatory movement is predominant, the forces act to produce transverse stretching or dilatation. At the same time the diameter of the head presenting is, by the rotation, changing into a smaller one, which likewise facilitates the passage. As the degree of rotatory movement is dependent upon the direction of the uterine resultant, we can understand the very different results in two cases where the condition of the soft parts and the position of the head are the same—but with the direction of the uterine action different. Or take one and the same case: suppose that the three resultants meet in a point and the head moves by translation only. The cervix may grip the head and be stretched only in a longitudinal direction, the dilating power is at a minimum. But if by change in the direction of the axis the uterine resultant can be thrown more in the direction of the occiput, a rotatory movement will be combined with the onward progress, lateral pressure will be increased, and the dilatation, or transverse stretching of the cervix, be combined with the longitudinal. A very slight change in the direction of the axis of the uterus is sufficient to make this difference, and hence the position of the patient may make a material difference upon the progress of the labour, more than has hitherto been recognised.

Professor E. Martin drew the attention of the profession to the advantage, when the pelvis was somewhat contracted, of laying the patient on her side, instead of the position on the back usually adopted on the Continent. He directed that the patient should be laid on that side which corresponded with the leading part of the child. If it was the occiput, then the patient should lie on the side on which that part lay. His son, Dr. A. Martin, has, however, shown that this rule is not accurate, and records cases from his

own and his father's experience where an immediate success resulted by turning the patient on the side corresponding to the forehead of the child. The selection of the side can be accurately made by a consideration of the views I have advanced regarding the mechanism of contracted brims ; and the rule for our guidance is, that the uterine resultant must pass to the side of the contracted diameter, and to that half of the pelvic brim through which the head is first to pass. If it is the occiput we wish to bring down, then by laying the patient on the side corresponding with the front of the child, the inclination of the uterus will be determined to that side and its axis directed towards the occiput. If, however, the indications are to favour the descent of the forepart, then the other side should be selected. The rule may be stated in other words: lay the patient on the opposite side from that on which lies the foetal part which you wish to lead in the descent through the brim.

In these cases, if the uterine resultant acts exactly in the normal direction—that is, passes perpendicularly through the conjugate diameter of the pelvis—no advance can be made. It must be made to pass to one side or the other, hence a lateral direction of the axis is in certain cases essential for the expulsion of the child.

The influence of an increased degree of the ordinary right lateral inclination of the uterus in the production of face cases has been pointed out by Dr. Matthews Duncan and others. This same direction of the axis explains the difficulty in the production of chin-flexion in some presentations over others, and the tendency for the forepart to lead. By the views I have expressed we may further see the importance of studying the direction of the axis, so that by a proper position of our patient we may have the uterus operating with us instead of against us in our endeavour to aid the progress of the labour.

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## THE PULSE-RATE CONSIDERED IN RELATION TO POST-PARTUM HÆMORRHAGE.\*

By J. ASHBURTON THOMPSON, M.D.

IT is not necessary to insist upon the great value which would be possessed by any trustworthy prognostic of post-partum hæmorrhage, or, when it has set in, of its probable result; and some conditions are recognised in which the accoucheur is taught by experience to apprehend, if not actually to expect, it. A primipara, for example, is always to be watched with solicitude in view of this kind of hæmorrhage, until she has proved herself to possess a uterus of good contractile power; and so also a very speedy, or a very tardy, labour are known to conduce to it. Yet, after all, it is the suddenness with which hæmorrhage sets in after the natural delivery of apparently healthy women which lends it its chief terrors; for in this case, pre-eminently, forewarned is forearmed.

There has been added to such prognostic circumstances as I have mentioned—I do not know by what writer in the first place—a prognostic derived from the state of the pulse, both as regards its *quality* and as regards its *rate*. As regards quality, Madame La Chapelle first remarked that such a pulse as indicates plethora obtaining during pregnancy and labour is likely to be followed by post-partum hæmorrhage; and Gooch was the first to describe such a pulse in this relation particularly, and to indicate the course to be pursued—either prophylactic, or preparatory to encountering the hæmorrhage itself, according to the period at which this peculiar kind of pulse was observed. Later than this, I believe, stress was first laid upon the rate of the pulse; and it has become an aphorism of obstetric practice, that, if after delivery the pulse range above a hundred beats in the minute, the patient cannot be considered safe. As a rule, it is taken that this means that the patient is not safe from hæmorrhage; but upon the authority of Dr. McLintock,†

\* Read before the Harveian Society of London, January 17th, 1878.

† *Dublin Quarterly Journal*, 1874, p. 75 *et seq.*

Dr. Labatt (whose opinion the former holds in great esteem) enlarged this inference to include convulsions as well as hæmorrhage. Upon the authority of writers too numerous to mention, however, it may be asserted that this axiom is laid down with regard to hæmorrhage alone—constitutional disease or any other obvious cause of variation in the pulse-rate being of course excepted.

Now, if the pulse-rate do indeed carry the weight with which it is thus accredited, I think it is plain that in it we possess a prognostic of post-partum hæmorrhage of such simplicity that death should but seldom ensue upon a complication of labour which, nowadays at least, is seldom uncontrollable save when unexpected. But if it have not this value, the result of misplaced confidence in it must be estimated exactly in inverse proportion to its supposititious value ; for the converse of the aphorism is also asserted—as by Dr. Denham,\* who says that even if a patient had free hæmorrhage, supposing her pulse to beat below a hundred, he would leave her with perfect confidence.

It does not seem likely that the statement first referred to—so valuable if true, so misleading if false or only partly true—should have been made upon any less ground than that afforded by precise observation. Yet I must admit that neither by inquiry nor by research have I discovered any record of observations bearing upon the subject of this paper, although many opinions may be found—the opinions of obstetricians whose names alone insure respectful consideration for them. I will therefore say at once, in case my observations or my conclusions from them should seem to contradict these opinions in any respect, that I desire not only that the conclusions should be distinctly separated from the observations, but that the latter—correct as I have endeavoured to make them and believe them to be—should be regarded as preliminary only to a future consideration of the subject. They are deficient in many respects ; but, apart from that, to make such observations accurate in a scientific sense is a matter of extreme difficulty.

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\* Loc. cit.

The objects to be sought, as it appears to me, are the behaviour of the pulse after normal delivery and the behaviour of the pulse after delivery complicated by hæmorrhage. In these tentative observations the cases utilised are sixty-three in number. They are not consecutive, since they were taken during two or three years ; but they are not selected, each case being observed or not according as I happened to have watch, pencil, or writing material at hand. They include fifty-four cases of uncomplicated delivery, and nine cases of post-partum hæmorrhage. In every case the first observation was made as soon as the child was separated from the placenta, except as otherwise noted ; and I estimate that time to be within three minutes of actual delivery. In every case also, every observation was made by the watch, the pulse being counted during not less than half a minute, and the result was written down at the time. Generally three observations besides the first were made, at short intervals extending over thirty minutes—for it is during the first half-hour from delivery, in the vast majority of cases, that hæmorrhage occurs : and usually a final observation was made at about twelve hours, although this is but seldom referred to.

The fifty-four observations of the pulse in cases of labour uncomplicated by hæmorrhage need not be recapitulated. It will be sufficient if I analyse them. They divide themselves into three classes, which consist of the majority, or thirty-nine, which agree in behaviour pretty closely ; and of two kinds of exception to this prevailing rule, which are followed by six and by nine of the remaining fifteen cases respectively.

TABLE I.

*In thirty-nine cases the pulse fell within thirty minutes after delivery.*

From 130 to 120	From 108 to 84
" 126 " 106	" 105 " 80
" 120 " 96	" 104 " 96
" 120 " 108	" 104 " 75
" 120 " 100	" 102 " 84
" 118 " 108	" 102 " 92
" 115 " 92	" 100 " 84
" 111 " 99	" 100 " 86

From 98 to 69	From 88 „ 84
„ 98 „ 88	„ 88 „ 78
„ 96 „ 84	„ 86 „ 80
„ 93 „ 78	„ 86 „ 80
„ 92 „ 80	„ 84 „ 72
„ 92 „ 84	„ 84 „ 72
„ 92 „ 86	„ 84 „ 62
„ 92 „ 84	„ 84 „ 62
„ 92 „ 84	„ 80 „ 76
„ 90 „ 78	„ 76 „ 60
„ 90 „ 82	„ 76 „ 69
	„ 69 „ 66

In the majority, or thirty-nine cases, the pulse fell within thirty minutes of delivery by an average number of  $13\frac{1}{2}$  beats; the extremes being 3 and 29. Very often the greatest fall occurred from the highest initial rates, as—

A fall of 20 occurred from a rate of 120	
„ 29 „	„ 98
„ 24 „	„ 96
„ 25 „	„ 105
„ 29 „	„ 104

And very often the lesser falls occurred from the lowest initial rates. As

A fall of 4 occurred from a rate of 88	
„ 4 „	„ 80
„ 4 „	„ 88
„ 4 „	„ 86

and so forth. So that at first sight it seems that these thirty-nine cases support the natural anticipation (formulated by Dr. Churchill\*) that the pulse, quickened by the exertion of labour, tends to fall to the normal rate during repose. But there are several exceptions even to the cases which seem to support this expectation; as where

A fall of 16 occurred from a rate of 76	
„ 9 „	„ 76
„ 3 „	„ 69

and it may be mentioned here, that falling of the pulse after uncomplicated labour to an abnormally low rate is a well-known, although not frequent, occurrence.

It therefore appears more correct to say simply, that after

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\* Loc. cit.



labour the pulse falls by a few beats—without reference, that is to say, to the standard rate of 75, or thereabouts. But although, as these cases show, that is perfectly true of the majority, a consideration of the exceptions makes it apparent that this assertion is unsupported in fact. Of the remaining fifteen, in six the pulse remained absolutely steady at its initial rate; and this was 60, 72, 84, 64, 72, and 104, respectively; while in the remaining nine cases, which constitute the second kind of exception, a rise from the initial rate was observed.

TABLE II.

A rise of 10	occurred from an initial rate of	76
„ 16	„	56
„ 4	„	86
„ 4	„	72
„ 6	„	96
„ 12	„	84
„ 5	„	63
„ 20	„	104
„ 10	„	54

That this rise is not merely the result of a natural tendency of the pulse to attain the standard rate is shown by the first, third, fifth, sixth, and seventh cases in this table; and it is to be observed, first, that this rise occurred very rapidly, and secondly, that it was maintained very steadily; maintained in the most marked instances during several hours short of twelve. In the last case but one the pulse still beat at 120 during the twelfth hour from delivery, although no complication to account for this high rate could then or subsequently be detected.

Thus it must be admitted, *upon such evidence as these fifty-four cases afford*, that the pulse may fall below, rise above, or remain steady at the rate obtaining immediately after delivery; and especially that it may rise to, fall to, or remain at, 100 or thereabouts, after delivery uncomplicated by hæmorrhage or by any other recognisable circumstance.

It remains to examine the behaviour of the pulse in cases of flooding; and it will be seen in inquiring into this point how far a low pulse-rate justifies the attendant in leaving his patient. The cases are nine in number; and as they are of various

degrees of severity I have classified them according to Dr. George Johnston's method. He gauges the severity of a case of flooding by the measures necessary to restrain the loss. Thus, cases in which pressure and cold externally are sufficient are placed in the first class ; the second comprises those in which the hand must be introduced into the uterus and cold water or ice passed in ; while the necessity for injecting the perchloride of iron distinguishes the third class. But as the correctness with which a case is placed in one or other of these classes depends upon the operator's judgment—in not using the perchloride, for example, except when that is absolutely necessary—I have to my short account of these cases appended a note of the amount of blood lost ; that is, the amount of that which could be gathered up in the hands and measured. In the first six cases this amount is estimated only by the double handful, which is equivalent to from two and a half to three ounces ; but in the three cases of the third class it was actually measured. The observations were taken precisely as in the normal cases, and, in every instance but one, the first observation was made before any hæmorrhage had occurred ; and, whether there were three observations or six taken, the last is that upon taking which I considered that the patient might be left. In no case was there any secondary loss.

I may now refer to the character of the pulse as distinguished from its rate, as observed in the whole number of sixty-three cases. I believe I have observed every kind of character among them except that described by Gooch ; and I have concluded that (with that exception) no information with regard to hæmorrhage can be derived from the character of the pulse. Yet I may remark here that Dr. Lombe Atthill\* has pointed out that the pulse may be deranged in a manner agreeing closely enough with Gooch's description from two different causes, which are anæmia and plethora ; and that he is of an opinion, with which I venture to agree, that the quick full pulse which is due to plethora is not in-

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\* Loc. cit.

TABLE III.  
*A Table of the Pulse-rate in nine cases of Post-partum Inertia Uteri.*

No.	Class of Hæmor.	Description of Labour.	Pulse-rates at minutes after delivery, &c.							Amount lost.	Remedies employed.	Result.
1	1st.	2nd. 1st stage 20h. 2nd " 4h.	8 m. Placenta removed.	10 m. Hæmor. began. 102	12 m. Hæmor. continued. 108	18 m. Hæmor. continued. 108	25 m. Hæmor. ceased. 108	Pulse continued steady at 108	About 20 ounces.	External cold and pressure.	Did well.	
2	"	2nd. 6 hours.	3 m. 60	8 m. P. removed.	10 m. Hæmor. began. 60	15 m. Hæmor. continued. 60	20 m. Hæmor. diminished. 60	Pulse continued steady at 60	About 20 ounces.	The same.	Did well.	
3	"	3rd. 15 hours. Ergot and forceps.	5 m. Hæm. began. P. removed. 132	15 m. Hæmor. continued. 120	20 m. Hæmor. diminished. 100	30 m. Hæmor. ceased. 80			About 30 ounces.	The same, with brandy and ergot.	Did well.	
4	2nd.	Pr. ret. 25-12 hours. Forceps for exhaustion.	5 m. Ran up from 100 to 130. P. removed with clot.	10 m. Hæmor. continued. 140	20 m. Hæmor. continued. 150	40 m. Hæmor. diminished. 140	90 m. Hæmor. ceased. 120	12 hours irregular. 126	About 35 ounces.	The same, with ice internally. Prepared to use perchloride.	Did well.	
5	"	2nd. Born before arrival.	5 m. Hæmor. already considerable. 70	10 m. Hæmor. continued. 70	15 m. Hæmor. continued. 70	20 m. Hæmor. diminished. 70	30 m. Hæmor. ceased. 70	Remained steady at 70	About 35 ounces.	Ice internally. Laudanum, brandy, and ergot.	Did well.	
6	"	Pr. ret. 22. 6 hours.	5 m. P. removed with clot. 76	10 m. Hæmor. continued. 74	15 m. Hæmor. continued. 70	20 m. Hæmor. continued. 70	40 m. Hæmor. diminished. 64	50 m. Hæmor. ceased. 62	About 40 ounces.	As above.	Did well.	
7	3rd.	Pr. ret. 21. 12 hours.	5 m. 72	10 m. P. removed with clot. 96	20 m. Hæmor. continued. 106	45 m. Hæmor. continued. 96	50 m. Fainted. Hæm. contd. 96	55 m. Perchloride injected. 108	65 m. Hæmor. ceased. 108	As above. Perchloride of iron injected.	Did well.	
8	"	Pr. ret. 24. 9 hours. Forceps.	Before delivery 10 m. 120	7 m. P. removed with clot. 126	12 m. Hæmor. continued. 130	20 m. Hæmor. continued. 128	40 m. Perchloride injected. 130	75 m. Patient left. 126	80 ounces by measure.	The same.	Did well.	
9	"	9th. 48 hours. Conj. diam. 3 3/4 in.	6 m. P. removed with clot.	7 m. Hæmor. continued.	10 m. Hæmor. continued. 118	15 m. Hæmor. continued. 118	20 m. Hæmor. continued. 128	30 m. Hæmor. continued. 120	50 m. Perchl. inject. 60 m. Hæm. ceased. 104	The same. Sclerotic acid subcutaneously. Perchloride injected.	Did well.	

variably followed by, and therefore does not prognosticate, the occurrence of hæmorrhage. It may be that such a pulse occurred among some of the uncomplicated cases, but that for this reason I did not notice it particularly. In two of the uncomplicated cases I observed intermittence of every fifth beat; I was unable to account for it. It persisted for twelve hours, but had disappeared by the thirty-sixth. I observed irregularity of the pulse in thirty cases out of the whole number; and I have satisfied myself by repeated observations that irregularity of the pulse is far more frequent after delivery than regularity. It usually persists for some hours short of twelve, by which time it has generally disappeared. It is to be noted that irregularity occurred in only one of the cases of hæmorrhage; and since the numbers in the table of these cases appear to indicate a degree of irregularity in more than one of them, I will explain that by that term I intend such irregularity as is observed in cases of brain disease, for instance. That is, that two observations made during two periods of five seconds may give different results, but that two observations made during two periods of a minute each will give the same result. This differs—whether or not essentially—from the irregularity of a pulse which now beats at 60, in ten minutes at 120, and in ten minutes more at 100, and then again at 115. I have observed no such irregularity as that in either kind of cases. The irregularity to which I now refer has no significance whatever with regard to hæmorrhage, and I have not discovered its connexion with any definite condition. It is less common in those who are obviously exhausted by their exertions than in those who do not seem to have suffered particularly.

If we now refer again to the table, and scan the register of pulse-rates in the cases of hæmorrhage, I think the first remark which offers itself is that a low or even a very low rate is consistent with a degree of hæmorrhage necessitating careful attention and energetic treatment to arrest it. One case of the first degree of hæmorrhage shows a perfectly steady rate of 60, two of the second degree a steady and a



nearly steady rate of 70 and 76 respectively ; while one of the third degree, in which so much as sixty measured ounces were lost within thirty minutes, shows a rate which at the majority of observations was 96, and which at no time rose above 108. It will next be noticed that the only case in this list in which a really high rate obtained—that in which the pulse stood at 130 at delivery, rose to 150, and after all fell no lower than 120—is a case of hæmorrhage of the second degree only. So that it may be said to be obvious at a glance that no very close relation is shown by this table to exist between the pulse-rate and the *degree* of hæmorrhage at all events. Upon this the reflection occurs that what is conveniently known as post-partum hæmorrhage is, in fact, relaxation of the uterus ; and it may well be asked whether the causes of uterine inertia be always such as are likely to affect other parts of the system—the circulation, most especially ?

Here I must beg your attention for a moment while I point out that in thus confining my observations to relaxation of the uterus—or, to use a negative term in preference, uterine inertia—I do not overlook the fact that other conditions have been enumerated by Dr. McLintock and others as causes of post-partum hæmorrhage. The causes of this complication are, he says, relaxation of the uterus, a plethoric state of the circulation, and deficient coagulability of the blood. But relaxation, or inertia, is the essential condition of hæmorrhage of this kind—without it hæmorrhage cannot occur. Be there never so much plethora, never so slight a tendency to coagulation of the blood, no loss can flow from a perfectly contracted uterus, obviously. I therefore venture to demur to this classification of causes of hæmorrhage, which places an essential condition upon the same footing as accidental circumstances, and prefer to concern myself with the former alone. Were one or other of these two additional circumstances of hæmorrhage ascertained to be invariably associated with uterine inertia, the assumption would be that they are respectively indications of systemic conditions of which the said inertia is a result.

But the contrary is the case; they are known to be occasional concomitants of inertia merely: and, indeed, while Dr. McLintock himself is not inclined to lay much stress upon deficient coagulability as a cause of hæmorrhage, it is not known that plethoric women suffer especially from post-partum inertia of the uterus. Nevertheless, it may be admitted that either of these conditions might aggravate the amount of blood lost within a given space of time; but I do not know that the author cited has regarded them in this light.

I feel justified therefore in basing such remarks as I may make upon the observations before you, upon the hypothesis that if the circulation afford an indication of the future state of the uterus with regard to the efficiency of its contractile power, then inertia must be the result of systemic disturbances. What is the probability? To speculate upon this question in the present state of knowledge of the nerve supply of the uterus would, I believe, be unprofitable. It is certain, however, that this organ is possessed of powers of action which are independent of the cerebro-spinal nerve system, and which are derived from the ganglionic system. While therefore it might fairly be surmised that a condition of the nerves which control the uterus tending to its imperfect contraction, which should be confined to the uterus, and should not betray itself by any systemic aberration, might exist; yet it could not be denied that such a derangement, although chiefly manifested by a local effect, would probably be only a part of a general disturbance of the system likely to be attended by other functional derangement—of the circulation, for example.

This, it seems to me, is a subject for physiological inquiry. Yet, as a matter of practical experience, we know that uterine inertia occurs under a variety of circumstances in which it is not only impossible to distinguish any other condition common to all, but very often impossible to distinguish any other derangement whatever. It is quite true that a prolonged labour, which exhausts the system as well as the uterus, is often followed by hæmorrhage. But it is equally certain that

an extreme degree of systemic exhaustion is consistent with active contraction of the uterus, on the one hand ; on the other, that apparently perfect freshness of the body is consistent with a marked degree of uterine inertia. So, also, we know that while repeated but futile efforts of the uterus predispose to post-partum inertia, a few efforts leading to precipitate delivery is at least an equally efficient predisposing cause. Lastly, not to multiply examples of a fact with which every one is familiar, there is a class of women for whom the term "flooder" has been invented ; to whom it is justly applied, because the reason of their flooding is occult. Be these persons favoured never so much by nature and by art in their labour, as soon as they are delivered they "flood." Farther, such women as have flooded without obvious cause in several labours, will on another occasion fail to flood ; and this behaviour appears to be as erratic as the former. I shall immediately relate such a case as this. In short, we know practically that the condition of the uterus after delivery is not invariably dependent upon any general condition of the body hitherto recognised ; that the uterus may refuse to contract while the system is entirely unaffected ; that the system may be utterly exhausted, the uterus not at all. Now, upon the evidence offered by the sixty-four observations before you, it may be observed that while the state of the uterus in the two classes of cases is respectively uniform, the pulse-rates in each class are various. I suspect therefore that, *quâ* the uterus the state of the pulse is accidental ; but that *quâ* the system the pulse-rate is the direct result of disturbances which do not necessarily affect the uterus, although they may sometimes be such as to do so.

If this opinion be entertained, those variations of pulse-rate in the different cases in each class which would appear anomalous call for no especial remark. It is necessary only to point out briefly in what way these cases show that post-partum hæmorrhage is usually the result of conditions which, whatever they may be, do not affect the pulse. I will first of all recall that instance among the normal cases in which I observed the pulse to stand at 104 at delivery, and

to maintain that rate steadily during about twelve hours. This was the patient's third labour at term. Her first appears as Case 7 in the table of cases of hæmorrhage, and it appears that she then had a pulse-rate of very near a hundred, above or below ; I now add that no reason for her flooding could then be recognised, either in her constitutional condition or in the kind of labour she suffered. In her second confinement I did not attend her, but upon that occasion she was reported to me as having flooded to a dangerous extent, and again no reason for the hæmorrhage could be assigned. On the present occasion she was delivered after a labour of six or seven hours, the child being born at last before I could get back to the house. Knowing her previous history, I was somewhat alarmed at this, and hastened to the bedside ; and then, although I ascertained at once that there had as yet been no hæmorrhage, I could gather no assurance from the pulse-rate (if that were to be taken as an indication of approaching hæmorrhage), for it stood at 104. But the uterus remained well contracted, and spontaneously expelled the placenta without a drop of blood, and yet the pulse still beat at 104. I waited a long time in order to watch it, but it still maintained itself at that rate, and was still found to beat at it many hours after delivery ; although no discharge occurred from the uterus for several hours, and no complication of any kind could then or subsequently be ascertained to account for it. That, I think, is for my present purpose a very valuable case ; for, if Table III. be referred to, it will be seen that the pulse-rate observed during her first flooding never rose above 108—a rate practically the same as that which obtained upon the last occasion, when she did not flood. So that it seems that in this case, at all events, the action of the uterus and the pulse-rate were independent of each other.

I ask your attention next to Cases 3 and 4, in Table III.—cases of the first and second degrees of hæmorrhage respectively, but which show the highest pulse-rates of all. In both, although it is noted only in the second, a very marked degree of systemic exhaustion was observed ; and in these cases it



is, I think, evident that the pulse-rate bears a very close relation to the hæmorrhage, which, it is equally apparent, was the result of no special uterine inertia, but of the general exhaustion of the bodily powers. At delivery, in Case 3, the pulse stood at 130, and sank steadily to 80 during the first half-hour; as the patient recovered herself the pulse sank, and the hæmorrhage ceased. In Case 4, during the exhaustion immediately following delivery the pulse suddenly ran up to 130, and then during twenty minutes gradually touched 150, subsequently falling to 126. Here, too, while the pulse was rising the patient remained exhausted, and the inertia persisted; but the fall in the pulse-rate advanced *pari passu* with the general recovery and contraction of the uterus. In these cases, then, we have two examples of inertia, possibly owing to a systemic condition, and we see that in such cases the pulse behaves in a particularly marked manner. But I think that it needs scarcely to be pointed out that they afford no evidence of an association between the pulse-rate and the *degree* of inertia, but only that conditions may obtain under which both circulation and uterus are simultaneously affected. It is even too much to say that when a great degree of systemic depression coincides with a very high pulse-rate, hæmorrhage is to be apprehended; for shock produces precisely the same effect of steady rise and fall in the pulse-rate, even when, as in these two cases themselves, there is no considerable persistence of the uterine inertia. Thus in a primipara who laboured during an average period, and in whom the head emerged without injury to the perineum, but, the body being suddenly shot out by a pain of extraordinary violence the shoulders caused a very severe laceration, there immediately arose symptoms of shock. There was no fainting, no intellectual confusion, nor any complaint; only pallor and extreme depression. During an hour and a half the loss amounted to ten measured ounces only; but the pulse, which stood at 120 at delivery, rose to 136, and then, as recovery set in, gradually sank from 136 to 124, 112, and 90, when recovery appeared perfect. So in a case recently laid before you, in which death

occurred from shock, probably due to laceration of the uterus, the pulse-rates at short intervals after delivery were 120, 120, 130, 140, 150 to 160 ; at which point the pulse stood for an hour and a half or thereabouts, when death occurred. The total loss in this case was forty measured ounces only—not a large quantity—and was checked within a few minutes of delivery by the perchloride of iron. That the pulse-rate followed the peculiarly marked course already indicated was due, not to a special condition tending to inertia, but to a general condition which included the latter. Thirdly, in a case of concealed accidental hæmorrhage, in which it may fairly be said that the danger to life arises in the shock or depression of the vital powers rather than in the hæmorrhage, the pulse before delivery but after the beginning of shock stood at 120 ; immediately after delivery at 120, and very soon after that (when the degree of depression is always much increased) it rose to 126. Twenty-five minutes afterwards it fell to 112, and continued to fall as recovery progressed thus—108, 80, 78, 72. In this case almost all the hæmorrhage had occurred before delivery ; was independent, therefore, of inertia ; all the danger lay in the degree of shock, and the pulse, as in the other two cases, followed the systemic condition of the patient very closely.

This is a state of the circulation under certain conditions, which I believe has not yet been pointed out. I refer to it now in order to show that in the only known case in which the pulse is affected in a characteristic manner, a marked systemic condition coincides ; and as farther evidence that this peculiar behaviour of the pulse is not connected in any direct manner with the state of the uterus, I remind you that in none of these five instances of highest pulse-rates was the inertia persistent—in none, that is, was the hæmorrhage excessive or uncontrollable. The table of cases, indeed, offers only three cases in which there was real danger to life—a number too small, certainly, to base any conclusion upon. But, since the condition with which I am concerned—inertia—was present in all nine cases, differing in those cases only in persistence ; and since, if the third and

fourth cases be excepted, no disturbing element could be recognised in any of them, the rates shown by the remaining seven should agree with each other pretty closely, and the rates in each class more closely still. They do not, however, appear to follow any definite rule.

Lastly, upon this occasion I wish to point out that these notes show that in fact I have disregarded the pulse-rate as a prognostic, or indication of my patient's safety from hæmorrhage. In several cases I have, as may be seen from the various tables, left them with a pulse-rate high above 100; and I may now affirm that I have done so with perfect confidence. Herein is confirmation, of a kind, of my contention. Others, no doubt, consciously or not, act so too. In practice, one prefers to ascertain the condition of the uterus directly, rather than to draw an inference regarding it from signs liable to variation from so many causes as are those afforded by the state of the circulation.

Here I must for the present relinquish this tentative or preliminary inquiry, which, as ancillary to that into the causes of post-partum inertia, is of great interest, and likely to afford practically useful information. In the meantime, I believe that these notes justify a contradiction of the bare assertion that a pulse which beats at or about a hundred shortly after labour prognosticates inertia of the uterus; while they establish the observation that when uterine inertia results from the systemic condition of shock, the pulse not only behaves in a peculiarly marked manner, but that from its behaviour a prognostication may be made. Not a prognostication, however, of the state of the uterus as such; but of a state of the patient which sometimes affects the uterus.

*Résumé of the*TREATMENT OF FIBROIDS OF THE UTERUS,  
PARTICULARLY IN THEIR EARLY STAGES.

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I AM disposed to write these notes, because of the great mortality attendant upon operations for removal of the tumours, *per se*, or for the ablation of them, and of the uterus, as an entire mass, and in some instances for the mere palliation of urgent symptoms.

I shall not dwell upon these operations, nor enter into any polemics concerning the advantages claimed by each operator for the steps he selects—to his judgment the best—nor concerning the disadvantages urged by objectors ; but I shall, as closely as possible, confine myself to the measures I have now for some years carried out with advantage.

Be it understood, that I refer chiefly to those stages before the growth becomes ripe for ablation ; before it attains such a size, and produces such distress and danger to life, that excision may legitimately be practised,—excision, that magnificent piece of surgery, destined, I have no doubt, to be a masterpiece when the skilled, disinfected, knife is wielded—destined to take rank, at least side by side, with that great operation—ovariotomy.

Were there, then, a fibroid in the anterior, or posterior, wall of the cervix, with or without retro- or ante-curvature, I should put the patient to bed, keeping her in it for a certain number of weeks, according to the effect of treatment in dispersing the growth. I need hardly say, separation from the couch of her husband is obtained by the very steps of the procedure, and is beneficial in allowing the most perfect possible quietude of the generative organs—a quietude which, with the absolute rest in bed, hastens the cure very materially. Two days after the bowels have been well cleared out, I introduce a properly adapted sea-tangle tent to dilate the os and cervix to a certain point, short of occasioning *much* pain ; and when in, I insert in vagina a tampon of cotton-wool



soaked in iodine and glycerine, or in glycerine and Condyl's fluid.

The tent and tampon must not be disturbed for two days, at the end of which time they may be removed, when the following changes will be found to have been produced :—A great watery discharge will be seen to issue from the vagina ; the tampon will be very slightly, if at all, tainted ; the os, premising it to have been hard and hyperplasmatic, will have begun to become soft and spongy ; and the cervix will be softer than before, if it have been previously hard and fibromatous ; the tent will be seen lying in the os, which it has expanded around it, and on withdrawing the tent a watery discharge will flow from the interior of the uterus, so copious, indeed, that a vessel will be required to receive it as it runs through the speculum.

The vagina during this introspection must be well washed out with some disinfectant.

The patient must still be kept in bed, and, after the interval of a day, have another larger-sized tent introduced, the tampon, as before, being also used ; this process must be repeated till the os and cervix are dilated sufficiently to admit two fingers, and the process of softening the os and cervix be more or less perfected according to the judgment of the attendant. In this way I have dispersed small inter-mural fibroids, situated in the lips of the os, or in the cervix, or still higher in the body or even fundus, and the coexistence of retro- or ante-displacement is no contra-indication of such a plan of treatment, but rather the contrary, since the cure of the malposition may be effected simultaneously with that of the fibroid.

In more intractable cases the dilatation had to be continued farther ; and, in addition, I resorted to painting the lower surface of the os, and the vaginal zone of the cervix, with the liquid mercury (hydrarg. nit. acid.) ; and, when this did not effect as rapid a cure as I looked for, I packed the interior of the uterus with pellets of cotton-wool soaked in glycerine, or glycerine and Condyl, or the same with tr. iod. co., a short cervical tent being inserted, the tampon being afterwards placed in vagina as before described.

These latter were left in for two days, and on withdrawing them, the pellets soon followed, simply slipping from the womb cavity through the dilated os and cervical canal, or being extruded from the uterus by uterine ejaculatory force: if they did not, I was in no way concerned, but introduced fresh pellets—for it will be found that the womb is dilated, and will at this sitting admit more plugging—and when I next removed the tampon and tent, the pellets would escape or be expelled, or I would remove them (if there were fœtor resulting from their presence), the watery discharge coming away copiously, the os and cervical canal and uterine cavity being dilated and enlarged, and the fibroid or fibromatous condition reduced.

This process of treatment I repeat till there is no further need for its continuance.

Larger tumours, whether subperitoneal or submucous, and occurring in the body or fundus, I have treated more heroically; for this reason, having well, and more or less rapidly dilated, I introduce in utero a wire tipped with cotton-wool soaked in the acid nitrate of mercury, and lightly sweep it around; then on withdrawal I pack the womb cavity with wool soaked in glycerine and Condyl's fluid, or the same and tr. iod. co.

At next sitting the entire process is repeated with a freer use of the acid nitrate, according to the amount of toleration likely to be allowed; till at length—when I consider the uterus will bear it—I introduce in utero a pellet dipped in the acid nitrate, but squeezed, so that the wadding, though saturated with the mercurial, will yet have none of it free on its surface; next, I insert the vaginal tampon, and allow all to remain undisturbed for two days—if the pellet can be borne, which in many instances I found it could, as I had taken the precaution of previously passing morphia suppositories into the rectum.

During the employment of these topical measures I administer liq. ergot and liq. strychniæ, considering that they act on the enlarged and dilated womb, as they do during pregnancy and labour, and thus materially aid in the dispersion in the manner I shall hereafter describe.

So effectual have I found this plan, in the treatment of tumours and fibromatous conditions, involving the womb itself intimately, that I resort to it even in those cases where outlying growths are met with, whose attachment to the womb is more or less remote, according to the length of the pedicle, and I have found it so valuable as to encourage me in further trials—the shorter the pedicle, the more hopeful being the case.

In inserting the pellets of wadding in utero, care must be taken not to pack the interior of the womb *too* full with the glycerine and iodine and cotton-wool, since such will foil our efforts, the pain produced in at least some instances being intolerable, and necessitating removal of the plugging should it not have been already extruded into the vagina. The removal is best effected by the long uterine forceps.

In parenthesis, I would here say, that if for any purpose in the course of treatment the liq. ferri has to be used to the interior of the uterus, it will be desirable, in passing through the dilated os and cervix the pellets of wadding, soaked in the liquid, to avoid bringing the first pieces into contact with the canals, or allowing the liquid afterwards to trickle back through them, until all the pellets are introduced, as the liquid quickly astringes and puckers whatever tissues it touches.

From inattention to this simple precaution extreme difficulty will often arise in introducing other pellets subsequently—a difficulty which may *in a measure* be obviated by mixing the liq. ferri with glycerine.

Instead of the acid nitrate of mercury, I have latterly employed purified carbolic acid, inserting the crystals into the womb cavity, or pellets soaked in the dissolved carbolic acid, or the acid nit. and carbolic acid in separate pellets; then pack the cavity beneath, as well as the os itself, and upper portion of the vagina, with wadding steeped in glycerine. I find the carbolic acid has the power of allaying the pain excited by the acid nitrate, if they be used simultaneously, and even that occasioned by its own application.

When the carbolic crystals, or the pure diluted acid is used, the living tissue is blanched, dried up, shrivelled, and,

as it were, withered, all sensation deadened according to the depth to which the caustic penetrates. Nor is the occurrence of irritative or inflammatory pain at all so likely to follow, nor other unpleasant effects, such as we sometimes find after using the mercurial.

“The chief nastiness,” as patients say, “is the taste” which comes into the mouth within a few minutes after insertion in utero of the carbolic preparation.

The concentrated purified carbolic acid effects in some cases sufficient destruction of tissues to accomplish what is required of it, especially if the structures be bared of their outer tegumentary coats, and it speedily removes the pain which results immediately after its application ; this speedy anæsthetising of pain is a very valuable property of the crystal.

Shall I here enumerate the ills of the acid nitrate which I have found to obtain in the course of its use ? The first effect which the patient notices is the pain, and till I used the carbolic acid in combination it was, in some, very severe, and tolerated only by the confidence of good resulting.

Before I began using the carbolic acid I found morphia suppositories, or laudanum injections, the best soothing agents.

Sickness—no doubt sympathetic from irritation of the womb—used to occur in some, with or without diarrhœa ; when the latter was severe it would at times lead to symptoms of dysentery.

Experience, however, taught me not to be alarmed at the issue of these manifestations, relief being obtainable by warm opiate, starch enemata, or morphia suppositories, or both.

Another effect was salivation, which, in some, ran on to be severe, never serious, nor ever even to loss of teeth. This I kept under by chlorate of potash, belladonna, and acids taken internally ; and, strange to say, the tendency to salivation passed away after a time, so that any quantity of the mercurial application seemed to be inert in reproducing it.

I would here draw particular attention to what I have already named—viz., the watery flow from the vagina and uterus, not that resulting from the use of the glycerine—a fact long ago pointed out by Sims—but that evidently re-



sulting from the irritation of the tent and tampon. In extirpation of the womb, and, indeed, after all operative procedures in immediate connexion with the organ, this discharge—the result of irritation or the manipulation necessary—occurs, and must be borne in mind so as to be guarded against, since it seems particularly noxious when allowed to come into contact with wounds, or to lie in the peritoneal cavity. In the *OBSTETRICAL JOURNAL* for February, 1877, I published a case wherein under circumstances of unusual difficulty I removed an intra-mural fibroid by means of the cephalotribe and the *écraseur*. I described what a profuse flow of serum occurred *within twelve hours* after the operation, and when the patient had been put comfortably to bed, and in the interval been kept perfectly quiet. This was so profuse that the patient was thought by the frightened attendants “to be bleeding to death.” It had soaked through napkins and other cloths, and even saturated the bed, and on first inspection might have been mistaken for an escape of urine, had I not noticed the absence of urine smell and taken the precaution to introduce the catheter to ascertain that the bladder had not voided its contents. Closer examination showed that the flow was from the interior of the uterus. This kind of flux Mr. Thornton observed to take place in some of his cases after operations on the womb. Even after simple manipulations of the uterus it will occur, and it should be borne in mind, and taken into serious account in excision of the organ, lest, making its exit into the peritoneal cavity, it should occasion severe irritation and further grave complications.

The knowledge of the likelihood of such an outpouring will, in a measure, be a guide to the use or otherwise of the drainage-tube when extirpations of the womb are undertaken.

It was remarkable how rapidly in some patients the fibromatous conditions were removed by the mere use of the dilating tents; uterine stimulants—such as ergot and strychnine—being taken by the mouth at the same time. The rationale of their conjoint action is thus to be explained :—

We will assume the seat of the growth to be in the cervix. The tent has effected dilatation, expanded the os and cervix, and occasioned in doing so direct pressure from within ; the irritation set up has induced the muscular fibres of the womb to contract—a condition helped by the ergot and similar drugs ; consequently, the two antagonistic forces compress the growth, and the clonic and tonic contractions diminish the blood supply to the entire organ and to the fibroma, the vitality of which latter being thus reduced and kept so, its increase is at first arrested, and afterwards quite stopped, its diminution becoming gradually effected till obliteration is completed.

The dilatation of the cervical canal and of the uterine cavity, which certainly takes place under the use of the tent, and of the packing, when resorted to, promotes the absorption, and aids the contracting force of the ergot and such drugs, and the compressive force of the tent and intra-uterine plugging.

This is even more noticeable, perhaps, when the deposition lies in the body anteriorly or posteriorly, is intra-mural, and approximates the mucous rather than the peritoneal surface.

The same explanation holds good when the fundus and upper portions of the womb are involved.

Of course, when the acids are used there is a distinct destruction of tissues, disintegration, and evolution ; that process which we term absorption being likewise called into requisition, and hastening the removal.

It is surprising how speedily obliteration will be effected in many instances, how rapidly the pain incidental to the disease will be removed and its return prevented, and how quickly and completely the hæmorrhages, be they ever so violent, will be controlled, and ultimately quite stopped ; owing, I think, to the healthy tone or contractility restored to the uterine vessels, the diminution of their calibre, and the firmer and more steadily equable support given them by the irritated muscular fibres of the womb, normal vigour and power being restored to the entire organ.

Sometimes occlusion of the cervical canal, by agglutination

of the interior surfaces, will be the result of treatment ; and this condition may be effected in the uterine cavity, particularly if our patient have arrived at the climateric period—a happy termination when it is accomplished, since this sealing up of the womb destroys its activity, and conduces to permanent cure, almost, if not quite, as effectually as if extirpation had been practised.

After completing this paper—the fruit of many years' practice and experience—I forwarded it to my friend Dr. Routh, who, with his usual friendliness, wrote to me as follows :—

“ The internal use of pernitrate of mercury, Bennett adopted long ago ; and I have washed out the uterus by it, over and over again, for years back ; but because of its disadvantage—the salivation—I now prefer nitric acid. Dr. Playfair read a paper also years ago, before the British Medical Association, on the virtues of strong carbolic acid application to the uterus. We even use bromine (at the Samaritan Hospital) within the uterine cavity.

“ I send you for perusal a letter (dated Nov. 9th, 1871), in which you will find all you describe as original in your paper fully given by Dr. Scott, of San Francisco. Since I received it, six years ago, I have followed out his advice many times at the hospital, and so have Dr. Rogers and Dr. Williams ; and as Dr. Matthews Duncan saw Dr. Scott's letter at the time, I fear, if you venture to bring this practice forward as original, you will bring down a shower upon yourself.”

I will here insert, in extenso, as a valuable contribution, Dr. Scott's letter to Dr. Routh :—

“ I then” (having enumerated his other adjuvants in treatment) “ adopt an additional remedy, and this consists in the acid nitrate of mercury pushed right up to the fundus. Don't be frightened,” he says, “ for though powerful it is perfectly safe, and wonderfully efficacious if rightly and cautiously used. My *modus operandi* is usually this—some four or five days after the catamenia have left I deplete locally ; and some four or five days afterwards I apply the acid nitrate, taking care, however, to give a calomel (gr. iv) and senna purge the day previous. I am particular in making the application

only once in the month, and that about the mid-period, say twelve, or thirteen, or fourteen days from appearance of catamenia, or six to eight days after they have left. I take a flat flexible silver probe, and having carefully twisted a *little* cotton (if slightly roughened it will prevent slipping, but I do not find it necessary) on it, dip it in the acid nitrate and see that none is dripping—nothing like Sims' speculum and the position on the side. Having fixed the anterior lip with the tenaculum and ascertained by the sound that the canal is clear at its curve, I pass with great *adroitness and rapidity* the application right up to the fundus, and allow it to remain till its contents are taken up. If the application is not made rapidly the fluid will all be expended in the canal and not reach the fundus, where it is specially needed: hence the necessity of position, &c. &c.

"If the patient has been previously purged the pain is generally slight, but *always* most controllable by a hot poultice and an opiate—rest for two or three days in bed absolutely necessary, and on no account should the sound be used in any examination till after the next period. If there is any obstruction in the canal to prevent the ready passage of the application, I use a curved two-bladed probe-forceps, with which I gently dilate the canal prior to application. When severe menorrhagia exists I precede this treatment by the following, and in bleeding after abortion, when you can't find anything left, I have found it magnificent. I divide the cervix laterally and antero-posteriorly *freely* with the metrotone, and carefully tampon the entire uterine cavity with strips of lint dipped in tr. iod. co. and glycerine—equal parts—while I also tampon the vagina with cotton dipped in glycerine. In from three to five days the lint comes away out of the cavity coated with pus and mucus, diseased follicles and mucous lining cast off, and now have a new soft uterus, with no recurrence of hæmorrhage—subsequently the acid nitrate completes the cure.

"In some cases you will have the application bring on the catamenia freely, and at an earlier date: I think nothing of it; enjoin rest and all will come right; as the vascularity of the diseased spots becomes less this will cease, and there



will also be less pain on application. In a case of small fibroid in anterior wall—pushing into cavity at junction of body and fundus—not to be got at by enucleation, but productive of most frightful hæmorrhage every month with general convulsions, I passed in a sponge tent for three hours and then divided capsule completely in situ—then stuffed uterine cavity with tr. iod. and glycerine on lint, and tamponed vagina.

“The result was magnificent, and, when followed ultimately by a couple of applications of acid nitrate, resulted in a perfect cure—uterus, formerly  $3\frac{3}{4}$  reduced to  $2\frac{1}{2}$ , and soft, with no appearance of tumour anywhere—patient fat and well. I think this practice was good, at least the result has been, and I shall try it again.”

In conclusion, I would say I was wholly unaware that I had any predecessors in my labours, or even co-workers, and thought I was opening up altogether new ground. Despite the facts laid before me in Dr. Routh's friendly letter—the reading of which brought these facts for the first time to my knowledge—I venture to publish my experience, caring not to claim originality of design or execution, but simply to put on record for the guidance and good (I should hope) of others, honest and painstaking work—work which has done good in my hands, and which in turn has done me good.

### General Correspondence.

*To the Editor of “The Obstetrical Journal.”*

SIR,—Since sending you my paper “On the Management of the Nipples” the following case has occurred in my practice, and it illustrates the importance of examining the mouth of the infant in cases in which, notwithstanding the adoption of the prophylactic measures which I have there recommended, the nipples are becoming tender.

A lady, having suffered, for three months after her first confinement, from sore nipples, came under my care during her second pregnancy. Acting under my instructions, the prophylactic treatment of the nipples was begun about the end

of the sixth month, and continued after the birth of the child. On the fourth day of her confinement she complained that each application of the child to the right nipple was causing pain. No change in this nipple could be detected; but on examining the infant's mouth, I found that the child was *tongue-tied*, the surface of the tongue having a tender, raw appearance, evidently from the increased manipulation of the nipple which its condition had entailed. The fold was at once divided, and at my next visit the pain had almost completely subsided; the lady expressing her astonishment at the satisfactory result. I then learnt that her first child had also been tongue-tied, but that this had not been discovered till the child was about five weeks old.

Seeing that writers on the subject of the nipples, so far as I am aware, have never referred to the child's tongue acting *mechanically* as an *exciting* cause of sore nipples, though this may be considered an obvious matter when attention is once drawn to it, I have thought it advisable to bring this illustrative case under the notice of the profession.

I may mention that, since I observed this source of imperfect and difficult suction, I have had several cases, both in hospital and in private practice, where I feel certain that simple attention to the state of the tongue arrested mischief in the nipples.

I am yours, very truly,

SAMUEL SLOAN.

4, Newton Terrace, Glasgow, W.  
11th February, 1878.

## *Abstracts of Societies' Proceedings.*

### OBSTETRICAL SOCIETY OF LONDON.

*Meeting, February 6th, 1878.*

Dr. CHARLES WEST, *President, in the Chair.*

Dr. MATTHEWS DUNCAN showed a specimen of general cancer of the body of the uterus, not affecting the cervix, which had occurred in an old woman. She had suffered from occasional pain and loss of blood, and the tumour had been supposed to be a fibroid. Her

illness dated from only three months before death, and when she came under observation she had the appearance of health. The uterus formed a tumour, felt above the pubes, of the size of a foetal head, movable, and not tender. She died from acute suppurative peritonitis, for which no cause could be discovered, no perforation having taken place. At the autopsy the uterus was found enlarged, eight inches in its vertical, six and a half in its transverse diameter, and weighing  $4\frac{1}{2}$  lbs. There was diffuse scirrhus carcinoma of the whole body of the organ, the section resembling that of a scirrhus mamma. Under the microscope some cancerous degeneration of the cervix also was discovered. There were cancerous nodules in both lungs and in the liver.

Dr. BARNES also showed a specimen of cancer of the body of the uterus, not affecting the cervix. The presence of cancer had been diagnosed during life, as there had been continued hæmorrhage, and occasionally foul sanious watery discharge. Peritonitis suddenly set in, and was followed by death. At the autopsy was found cancer of the whole interior of the organ, commencing from the mucous surface, and not involving the cervix. It was probably of the epithelial kind. The parts were all adherent, and there was one perforation into the rectum, and another into the peritoneal cavity. There appeared a tendency to eat through in all directions. Perforation in such cases was not uncommon, but rarely took place into the peritoneal cavity; more usually into the bladder, or into the rectum. In Dr. Matthews Duncan's case peritonitis had probably arisen independently without perforation, as happened occasionally in such cases.

The PRESIDENT said that the cases were important, as drawing attention to the fact, too often forgotten, that the os and cervix might be left intact in cancer of the body of the uterus.

Dr. BARNES said that the President and Rokitsansky were the chief authorities who had established the fact that scirrhus of the body of the uterus is extremely rare. The disease was generally rather sarcoma, and he imagined that the specimen shown by Dr. Duncan was an example of this.

Dr. ROUTH wished to know what the early symptoms were in each case, specially in that of Dr. Duncan, whether there was any menorrhagia or foetid discharge. He had had a case last year of fatal peritonitis from perforation of a cancerous uterus.

Dr. GODSON showed a specimen of cancer of the uterus, not affecting the os or cervix. It involved chiefly the mucous membrane of the cavity, and appeared to be of the epithelial kind. The patient was healthy-looking and florid, and she came under his care at St. Bartholomew's Hospital in December, 1876. Every morning, about ten o'clock, she had very intense pain in the region of the uterus, which lasted about four hours. There was also occasional, but not considerable, hæmorrhage. The cervix appeared healthy, the uterus was movable, the sound passed  $2\frac{1}{2}$  inches, and its introduction set

up some bleeding. The patient afterwards left the hospital, and went home. She died about four months afterwards, having refused food for the last fortnight. During the last few weeks of her life there had been a slight foetid discharge. Death appeared to have been due to exhaustion from constant pain, nothing else being found at the autopsy except cancerous disease of the internal surface of the uterus.

Dr. ROGERS mentioned the case of a patient who had been supposed to be suffering from ileus, to whom he was called in consultation. On making an examination per vaginam, which had not previously been done, he found a large cancerous tumour of the uterus, apparently involving both ovaries and obstructing the sigmoid flexure. The cervix was quite healthy, and there was no discharge or hæmorrhage. Eventually he advised colotomy, and the patient went into St. George's Hospital to have that operation performed. She died there not many weeks ago.

Dr. HEYWOOD SMITH reminded the Society that he had shown at the last meeting a specimen of cancer of the body of the uterus not involving the cervix. The early symptoms in that case were the same as those of a fibrous tumour. There was no foetid discharge, and scarcely any pain, but occasional uterine hæmorrhage.

Dr. MURRAY remarked that the occurrence of pain might help the diagnosis in some cases, but it was not present in all. He had a case at present under his care in which occasionally severe pain occurred. The patient was sixty years old, and for two years she had had profuse menorrhagia, with constant oozing of blood through the intervals. After dilating the os with a tent, he introduced his finger to the summit of the uterine cavity, and felt a substance like the stump of a polypus. Some bleeding followed this exploration. He afterwards removed a portion with polypus forceps. This had been examined by Dr. John Williams, and declared to be malignant. Subsequently he injected a solution of perchloride of iron, and then passed up a swab. The patient had gone on well so far. He thought that in these cases dilatations with a tent was desirable for the sake of diagnosis, and especially with a view to prognosis.

Dr. BARNES said that the symptom of pain was a valuable one in reference to diagnosis of cancer of the body of the uterus. In cancer of the cervix it was often long delayed; in the other case, it was early and urgent.

Dr. CHAMBERS said that at the meeting of the British Medical Association, at Birmingham, he had related a case of cancer of the body of the uterus, in which he had scraped out the cavity with Marion Sims' sharp curette. For two years the patient remained in fair health, but the disease then recurred.

Dr. EDIS asked Dr. Matthews Duncan whether his case were the same as one which had come under his own observation. This was that of the wife of a retired naval officer, whom he had seen a few weeks ago. She was forty-two years old, married late in life, and



sterile. Menses were regular, and not profuse. Six months before she was attacked by pain in the abdomen, which ended in well-marked and severe peritonitis. He found the uterus fixed, the cervix healthy, and little or no hæmorrhage taking place. He thought a fibroid tumour could be excluded, and there was no history of phthisis; he therefore concluded the disease to be cancer. The friends not being content with such an opinion, a second eminent consultant was called in, who declared the disease non-malignant; while a third thought it was cancer of the body of the uterus, not involving the cervix, so that foetid discharge was absent. The patient rallied under the use of opium, but a few weeks later was still suffering much pain. He had no doubt himself that it was cancer.

Dr. GODSON explained that Dr. Matthews Duncan's specimen had been for some time in the Museum at Edinburgh.

Dr. HAYES thought that there was a risk in the introduction of sponge tents. In a case some time ago, at King's College Hospital, the diagnosis had been in doubt, and the introduction of a tent was projected. It was not carried out, and the next day the patient died from perforation. This would have been attributed to the tent if one had been used, and he thought that the employment of one might lead to such a danger.

Dr. MURRAY said that the tent used in such a case would be short, and not hard, and he did not see how it could possibly perforate the fundus.

Dr. ROUTH thought that in some cases the use of tents was the only possible means of diagnosis. He thought that Dr. Godson's case would have been perfectly curable according to the method of treatment followed out at the Samaritan Hospital. This was to apply a strong solution of bromine on a small sponge tent. He was never afraid to adopt such strong means, the result of which was that some cases were cured, and others were relieved for years.

Dr. GODSON reminded Dr. Routh that in his case the uterus had been movable, and there was no cachexia nor foetid discharge. After death there was half an inch of fat in the abdominal walls.

Dr. ROGERS mentioned the case of an aged spinster, who suffered severe pain, apparently neuralgic, and was accustomed to live upon anodynes. There was no hæmorrhage or vaginal discharge, and he found the vagina extremely contracted, making examination difficult. He could not be sure that there was any uterine disease, but another doctor felt certain cancer was present. After death, cancer of the uterus and ovaries was found, the cervix being unaffected.

The PRESIDENT thought that it would be very advantageous if some Fellow would make the subject his special study, and collect evidence, especially with reference to diagnosis and treatment. Almost all the cases brought before the Society were obstetric and not gynæcological, while none at all referred to the diseases of children. He thought the Society should avoid narrowing too much its field.

Dr. CHAMBERS showed a large uterine tumour, weighing 14 lbs., removed that afternoon at the Chelsea Hospital for Women. The patient was thirty-six years old, and for five or six years had been under treatment, chiefly for uterine hæmorrhage, and general loss of vigour. For a time she had been under Dr. Godson at St. Bartholomew's, but ultimately, in 1876, she came under his care at the Chelsea Hospital for Women. Menstruation was then profuse, lasting from fourteen to sixteen days, and accompanied by much pain. The sound passed over six inches, rather toward the right side; the pelvis was free. She was treated by hypodermic injections of ergotin, with the effect that the periods were reduced to six or seven days, and pain became less. Two or three months after it was found that the tumour on the right side had become associated with a companion lump on the left side, larger than the former, and soft. He himself thought it fibro-cystic, but Dr. Barnes believed that it was an ovarian tumour, and that the uterus was merely drawn up and elongated. As life was threatened, operation was resolved upon. The tumour was removed together with the uterus and both ovaries, which proved to be distinct from it. The uterus itself was filled with a bulging gelatinous mass, the uterine cavity being expanded over the mass, which appeared to grow from the lower part on the left side. A huge mass of similar substance was enclosed in the left broad ligament, connected by fibrous material with the uterus. There were no adhesions, but there was much difficulty in securing the stump, which was about six inches broad. It was transfixed by strong whipcord ligatures and tied very tightly, but when the tumour had been cut away, the ligatures were found to be perfectly loose. He therefore encircled the whole root by a large double whipcord ligature, and left the ends hanging out of the wound to serve for drainage. The patient was in good condition so far, and that evening had a pulse of only 84.

The specimen was referred for examination to Dr. Galabin and Dr. Herman.

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Dr. ROPER showed a specimen of eversion of the intestine through the umbilicus of an infant. The funis did not come away till the fifteenth day; with it there separated a slough about the size of a shilling, leaving a deep ulcer, which was dressed with antiseptic paste. A part of the ileum became adherent, and finally ulcerated through, forming a fæcal fistula. Subsequently the intestine became invaginated, and three inches of it were everted. The child, however, lived till the thirtieth day.

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*Report of the University Lying-in Hospital, Montreal.*

By Dr. MACCALLUM.

The Report contained statistics of the cases from October 1st, 1867, to October 1st, 1877. The hospital was a small building con-

taining two wards, each with four beds, and a separate room for private patients. The average number of cases in the year was 120. The patients were poor married women, often in great poverty, and addicted to alcohol; also unmarried women who led irregular lives, and girls who had been seduced. Out of 995 cases there were eight deaths, seven of which were due to puerperal fever, which was epidemic in 1871 and 1872. In the first outbreak, which followed an epidemic of the disease in the city, there were five cases and three deaths. The first occurred in a half-starved woman, five hours after delivery, and there were four other cases within two days. The hospital was then closed for a month and disinfected. No other case occurred till April, 1872, when the disease was again rife in the city. Eight patients were then attacked and four died. The hospital was closed for six weeks, and since its reopening there had been no further case. The eighth death was a case of chronic Bright's disease. Death occurred four days after delivery of twins, and was due to uræmic coma. Of the children, 968 were born alive, 47 were still-born; 35 males and 12 females. Forceps were used in 19 cases, and the perforator in one, giving a forceps-rate of 1 in 52½.

Pelvic contraction was rare in Canada, since there was little of defective hygiene or overwork in the early years of life. Lately factories had been established, in which young girls were employed, and this would probably make a great difference in future years. In the forceps cases all the mothers recovered, and sixteen of the children were saved. The case in which perforation was required was one of dystocia due to a hydrocephalic head. The shoulder presented, and version was performed ten hours after rupture of the membranes. The foot was brought down, but the leg would not descend, even after the second foot had been seized. Eventually the passing of a loop over the foot, and making pressure on the shoulder, proved effectual. The head becoming arrested, and a considerable tumour being still felt in the abdomen, hydrocephalus was detected, and the head perforated. The mother went out well on the seventh day. They had had great immunity from post-partum hæmorrhage, and it had never proved necessary to inject an astringent. This the author attributed to the special mode of management adopted. Care was taken to press on the uterus, and neither to extract the limbs, nor make the slightest traction on the cord. But the special point was the treatment of adhesion of the membranes to the lower part of the uterus. This might be recognised, if the membranes were twisted up into a cord. If adhesions existed, this cord, if traced up, was found to spread out in a fan-like manner near the os; if the membranes were merely held tight, it tapered to a point. The treatment was to separate the membranes carefully by the fingers, and so avoid the risk of hæmorrhage. There were seven cases of eclampsia, but no deaths; two of the children only were stillborn. Albuminuria was present in six of the seven cases. Venesection was employed in two

cases with satisfactory results, twenty-five ounces of blood being abstracted. It was not from want of faith in it that it was not used oftener, but because the class of patients admitted could not bear depletion.

Dr. GODSON remarked that the size of the children seemed large in Canada. He had weighed a large number at the City of London Lying-in Hospital, and found the average weight of males, 6 lbs. 13 oz.; of females, 6 lb. 10 oz.—fully a pound less in each case than the weights given by Dr. MacCallum.

Dr. MURRAY did not see how hæmorrhage could occur from adhesion of the membranes, since they were not attached to the placental site. He had found pieces of membrane come away from the third to the sixth, or even the fourteenth day; but in no case was there hæmorrhage, nor any other unpleasant symptom. He thought the usual method correct, to make gentle traction on the membranes, but not to introduce the hand into the uterus to remove them, if some were retained.

Dr. EDIS called attention to the high proportion of stillbirths—about five per cent.—which seemed in excess of that in this country. It would have been interesting, on this account, to have some detail of the protracted labours. He thought that, especially since the size of the children was excessive, the proportion might have been materially diminished by a more frequent use of forceps. He frequently saw in consultation cases in which labour had been allowed to be protracted far too long, and he was convinced that numbers of children were sacrificed in this way.

Dr. ROPER thought that Dr. Edis must have met in consultation many bad practitioners. Doubtless, protracted labour would occasionally cause the death of the child; but he did not think Dr. Edis' conclusions were borne out. In the Eastern Division of the Royal Maternity Charity last year, out of 2409 deliveries, the forceps cases were only 17, and the ratio of stillbirths was under 3 per cent. There seemed to be a markedly neurotic character of the ailments at Montreal, the proportion of eclampsia, seven cases out of 995 deliveries, being enormous. He thought the subcutaneous injection of ergotin was not sufficiently employed in post-partum hæmorrhage. It was often effectual when the patient was in a state of collapse, and the stomach would not absorb anything given by the mouth.

Dr. J. WILLIAMS said that sclerotic acid, a new principle obtained from ergot, would prove preferable to ergotin for subcutaneous injection, as causing less irritation. One grain would dissolve in six minims of water, and the dose was half a grain. He had not yet tried it in post-partum hæmorrhage, but had found it effectual in a case of fibroid tumour.

Mr. G. D. BROWN thought that Dr. Edis' experience of general practitioners must have been a very unfortunate one. He should be ashamed to let a patient remain without assistance even for two



hours after full dilatation of the os, if no progress were being made. Probably, however, many of the cases of long protraction cited by Dr. Edis were instances of a prolonged first stage. He agreed, however, in thinking that forceps were not generally used often enough.

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## OBSTETRICAL SOCIETY OF DUBLIN.

*Meeting, June 16th, 1877.*

THOMAS DARBY, F.R.C.S.I., *President, in the Chair.*

Dr. JOHN A. BYRNE showed a normal uterus and ovaries from a girl aged seventeen. A large soft tumour behind the cervix had been felt per vaginam, and had been supposed to be a collection of pus. At the autopsy it was found to be due to the distended colon displaced into the retro-uterine space, and glued by lymph. There had been obstinate vomiting, but no intestinal obstruction.

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*Ovarian Cyst.*

Dr. ATTHILL exhibited an ovarian cyst removed from a patient on whom the operation of ovariectomy had been performed in the Rotunda Hospital a few days previously. The patient was progressing very favourably.

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*Dr. Tarnier's Midwifery Forceps.*

Dr. ATTHILL exhibited the midwifery forceps recently invented by Dr. Tarnier, Surgeon-in-Chief to the Maternity of Paris. Dr. Atthill said:—Dr. Tarnier objects to the forceps in general use, because there is no means of knowing with certainty in what direction traction should be made by them while the foetal head is being drawn through the pelvis. His forceps, now exhibited, have two pairs of blades—one prehensile, the other the tractile. The former, when once applied, should not be touched by the hand of the operator, but traction should be made with the other in the direction indicated by the former. He also maintains that, with his forceps, the head rotates with much more facility than if the English instrument is used. We have used Tarnier's in the Rotunda Hospital, and are prepared to admit that the instrument does possess the merits claimed for it by its inventor; but, on the other hand, there are serious objections to it, the chief one being that the pressure of the blades on the foetal head is regulated by means of a screw, and that it is quite possible for the head to be compressed to a degree calculated to endanger the life of the child without the operator being in the least aware of it. However, in the instances where I have employed it, I was pleased with the instrument to a degree much beyond what I ex-

pected. The instrument is, however, much more troublesome to apply than the English one, and will never, I am satisfied, be a popular one.

*Report of the Rotunda Hospital for year ending 5th November, 1876.*

By LOMBE ATTHILL, M.D., Master of the Hospital.

PART I.—THE LYING-IN HOSPITAL AND EXTERN MATERNITY.

Following the example set by my predecessor, Dr. George Johnston, I propose to lay before the Society a Clinical Report of the Rotunda Hospital for the past year. I regret that want of time has compelled me to omit many of the details so accurately prepared by him; but as Dr. Johnston undertook the publication of these reports with the avowed object of showing\*—

“1st. That zymotic disease (puerperal fever) does not prevail epidemically in large lying-in hospitals, provided they be *properly managed*; and

“2ndly. That puerperal fever, when it is epidemic, does not necessarily make its appearance in great maternity hospitals, in the first instance,” an object in which he so perfectly succeeded; and as several of his tables were compiled specially with this view, my omissions will perhaps be a subject of less regret. On the other hand, I have given some details relative to the gynæcological department, and extern maternity, which departments of the hospital have, in consequence of the changes recently made by the governors, assumed positions of greater importance than they hitherto occupied in the institution. These changes comprise—

1st. The enlargement of the gynæcological department, and the complete separation of the lying-in hospital from it.

2ndly. The taking of steps calculated to render the extern maternity more efficient.

3rdly. The erecting of a suitable building as a dispensary for women.

The first was effected by allocating the whole of the auxiliary hospital to the reception of patients suffering from uterine and ovarian diseases. Formerly some of its wards were used as labour wards; it now contains, as remodelled, three large and four small wards, and can accommodate thirty-five patients. One of the small wards is reserved solely for the reception of patients suffering from that form of ovarian disease necessitating the capital operation of ovariectomy, no other cases being admitted into it.

This hospital stands separate from the principal building (the Lying-in Hospital) at a distance of seventy-two feet to the west, and in advance of it by twenty feet.†

\* *Dublin Journal of Medical Science.* February, 1871.

† See Dr. Johnston's Clinical Report for 1869, in *Dublin Quarterly Journal of Medical Science.* February, 1870.

The second important step taken by the governors is thus referred to in their report for the year ending 31st March :—

“The requirements of poor women, who are unable to leave their homes at the period of their confinements, have engaged the anxious attention of the governors. The number of women seeking to be attended to in this way by the charity has of late become so large that the governors have found it expedient (for the effective working of this department of the institution) to appoint a medical officer, termed ‘The Resident Clinical Clerk,’ whose duty it is, under direction of the master and assistants, to attend, and visit subsequently to their confinements, such poor women as apply for attendance at their homes. In taking this step, the governors wish to point out that they are not alone conferring a benefit on the poor, and extending the usefulness of the charity, but are carrying out the recommendations of more than one Royal Commission, appointed to inspect and report upon the condition of the institution.”

This arrangement has proved most satisfactory, and the result has been that the number of deliveries in the extern maternity has risen from 275 in the clinical year ending 5th November, 1875, to 638 in that terminating 5th November, 1876, the number of cases admitted into the house being the same in both years—a clear proof that the class of patients seeking relief from the two branches of the charity are distinct.

During the year ending 5th November, 1876, 1047 patients were delivered in the hospital. Of these—

59 were delivered with the forceps.

11 by version.

1 by the cephalotribe.

9 cases of twins occurred.

28 „ of breech, or feet presentation.

4 „ of the hand or shoulder.

4 „ of face presentation.

12 „ of prolapse of funis.

2 „ of placenta prævia.

18 „ of accidental hæmorrhage.

21 „ of post-partum hæmorrhage.

8 „ of adherent placenta, requiring the introduction of the hand.

1 case of rupture of the cervix.

1 „ of rupture of the uterus, and

2 cases of convulsions.

The forceps was applied fifty-nine times, or once in about every 17 cases. No fixed rule was laid down with respect to the application of this instrument. In about one-fifth of the cases the os uteri was not completely dilated. Barnes's long double-curved forceps were almost invariably employed. Indeed, the short straight forceps were never used, except on one or two occasions, when the head being delayed at the very outlet from inertia, I applied it, with the

sole object of showing the class the mode of doing so. Barnes's forceps are, in my opinion, so superior to any others for facility of application, lessened liability to slip, and greater power, that, while admitting that the short straight forceps (known in this city as Beatty's forceps) are quite sufficient to effect delivery in many cases where the head is low, it will, I am convinced, as prejudice subsides, entirely supersede the latter instrument.

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*Cephalotripsy.*

In the single case, No. 3, Class I., in which the cephalotribe was used, the fact of the pelvis being under the average size having been demonstrated by the result of three previous labours, in all of which the child had been lost, I decided, in the hope of saving its life, to attempt delivery, on this occasion by version, with the most unfortunate results. Version was accomplished without much difficulty, but all the efforts which could, with safety, be exerted by myself and Dr. Macan, failed to bring the head through the brim; these efforts were continued for fully fifteen minutes. The child was then evidently quite dead, pulsation in the funis having ceased for some time. I, therefore, perforated behind the ear, applied the cephalotribe, and finally, with difficulty, extracted the head; the mother died. The child was very large, weighing, after evacuation of the brain, upwards of 9 lbs.; had the child been of average size, possibly my efforts to save its life might have been successful, but the result of the case has had the effect of confirming my previous experience—namely, that turning in cases in which the pelvis is undersized is a proceeding of a very hazardous nature, and my opinion is adverse to its practice.

I shall not weary the Society with commenting on other cases, though many present features of great interest, but shall proceed to consider the deaths which, during the past year, have been unusually numerous. Certain facts connected with these will not be wholly devoid of interest.

From the 5th November to 5th December, not only did no death occur, but during that period, in which about ninety patients were delivered, the health of the hospital was all that could possibly be desired. On the 5th December, 1875, a woman (Case I., Class III.), was delivered with the forceps, who, on admission, was plainly in a state of great depression. Subsequently we ascertained that her family had discarded her on account of her having married a man of bad character, who, to add to her sorrows, had been committed to gaol on a charge of theft on the very morning of her confinement. She became maniacal on the third day, and died on the 13th December of peritonitis.

On the 28th December, after an interval of twenty-three days, another death occurred (Case II., Class III.). The patient was a young unmarried woman, who felt her position keenly. She was



constantly crying. She, in like manner, became maniacal, and died of peritonitis.

Next in order of the cases of so-called "puerperal fever," which can with any fairness be considered as being of an epidemic character, was that of a woman (Case II., Class II.) delivered on the 12th January. She was very ill on admission; tongue dry; pulse 120, rising during labour to 140. She too became maniacal, and died.

On the 24th January a woman was admitted in a condition almost of starvation. In this patient (Case III., Class III.) symptoms of peritonitis showed themselves on the day following delivery. She improved, seemed convalescent, but relapsed. This woman might fairly have been entered as having died of destitution.

On the 31st January a woman (Case III., Class II.) was delivered who had hæmorrhage before admission; her tongue was furred, and she had green vomiting during labour.

I ask the Society to say, were these cases of zymotic disease generated in the hospital, or had the fact of their being delivered in the hospital anything to say to their deaths? If they have, how are we to account for the following one:—

On the 27th January, a date coinciding with that at which these cases were occurring, I was asked to meet Dr. M'Clintock in consultation with Drs. Halton and Ringwood of Kells, in the case of a lady of rank, confined at her father's residence, about two miles from that town. She had been delivered five days previously after an easy and rapid labour; her nursetender did not belong to Dublin, and had been staying for some weeks in the house with the patient, and it was known that she could not have been for months in attendance on any case of an infectious nature. Dr. Ringwood, who was engaged to attend this lady, did not arrive till after the birth of the child; he had not seen a case of puerperal fever for more than a year previously, yet this lady was attacked with puerperal fever and died. Dr. Ringwood told me that he learned subsequently that a woman had died a few days previously of the same disease, at a distance of about two miles from this lady's residence. Here were two deaths occurring in a remote country district simultaneously with those I have quoted as having occurred in this hospital.

One other case I shall detail, and then leave the members of the Society to form their own judgment on the question these cases raise. Several deaths occurred in the hospital in the months of March and April. Sixteen patients were delivered between the 1st and 6th of April, both days inclusive; of these four died (see Nos. 23, 24, 31, and 32). One of these was a young unmarried girl, one a married woman who had, during her husband's absence, become pregnant to a married man; both were in a state of extreme mental distress. Both were confined on the same day and died. A third had been ill before delivery; these three patients died on the 6th, 7th, and 10th of April. On the 6th a woman was admitted in labour, and was confined at 4 P.M.; at 8 A.M. on the following

morning, April 7th, she was, without any premonitory symptoms, seized with violent vomiting, which nothing could check, and she died the following day, at 7 A.M., twenty-three hours after the occurrence of the first symptom, thirty-nine hours after delivery. This terrible case, occurring simultaneously with the three cases just mentioned, impressed me so greatly that I seriously considered the advisability of limiting the admissions into the hospital; fortunately I decided to postpone doing so, as all the other patients in the hospital were quite well. I was further influenced by the fact that as two out of the four cases occurred in patients of a class in whom "puerperal fever" was likely to occur—namely, those suffering from extreme mental distress, while a third had been in bad health and given birth to a putrid child—I was justified in waiting a little longer before taking a step likely to cause alarm among the public. I say fortunately, for though no additional precautions were adopted, no case of any form of puerperal fever occurred subsequently. I do not mean fatal cases, but absolutely no case of any form of metria occurred during the whole of the following month, in which the full average number of deliveries occurred.

I ask again, were these cases of zymotic disease or not? or were they cases of puerperal disease developed by causes other than those of an epidemic nature?

If they were cases of true zymotic disease, how are we to account for their sudden cessation? If the "aggregation" of lying-in women be the source of puerperal fever, it should spread and be intensified under circumstances such as those I have narrated?

In order that the Society may be able to form a judgment on this subject I have divided the fatal cases into four classes. In the 1st class I have placed those who died from the nature of their labour. In the 2nd class those manifestly ill before admission into hospital, and who, I believe, would have died no matter where confined. In the 3rd class those suffering from mental distress—the majority of whom were unmarried; and here I may point out that in this hospital the deaths among women of this class must continue large, and consequently, for the future, as has been the case during the last fifteen years, tend to render the mortality of the hospital relatively greater than formerly. Twenty years ago the number of patients admitted into the hospital was, on an average, 2000 annually; now the deliveries do not much exceed 1000. But now, as then, it is the great refuge for the very poor and the wretched. The condition of the working classes has materially improved in Dublin of late years, and the majority of the wives of the artisan class now remain in their own homes for their confinements. But it is always among the very poor and wretched that the majority of deaths occur, and they now form the great bulk of our intern patients. In the 4th class I have placed those in whom no predisposing cause appeared to exist. This class includes eleven cases, but of these some might fairly have

been placed in the 2nd class. Thus, Case IV. was 56 hours in labour; Case XI., 52 hours in labour, and was then delivered with the forceps; Case V., 40 hours in labour—very delicate previously; Case VII., child putrid—had been in bad health for a month before her confinement. But as in none of them did the evidence of there being any sufficient predisposing cause to account for the fatal result seem satisfactory to me, I have placed them in Class IV.

It is remarkable that out of the eleven cases comprised in this class no less than six were due to septicæmia and one to pyæmia. Of the remaining four, one died of bronchitis, and one of pneumonia; two only of true puerperal peritonitis. Of these, one was a very delicate woman; her labour was very tedious (40 hours). In the other nothing occurred during labour, or existed previous to it, to account for the attack.

On considering the details of all the foregoing cases, and watching them as I did closely during life, I have come to this conclusion—that the great majority of the fatal cases recorded were due to septicæmia—most of them, if not all, being auto-genetic. That puerperal fever in some of its forms is infectious is beyond all doubt. But I do not believe that form of the disease which is due to auto-infection and which, in my opinion, is the most common of all, to be so. Nor am I satisfied that among the fatal cases enumerated above, any one died of disease contracted in, or of infection emanating from, or present in, the atmosphere of the hospital.

A few words as to treatment. We tried various drugs with very nearly the same result, and that was altogether unsatisfactory. The hyposulphites and sulpho-carbolates, when borne, seem to do good, but they were seldom, in bad cases, tolerated; frequently they were either vomited or induced purging, and had to be omitted. Sometimes quinine in full dose (5 to 10 grains), in combination with opium, agreed; but, with the exception of opium, I have little faith in drugs in the treatment of any of the forms of puerperal fever; and of all means of administering opium none can compare with the hypodermic injection of morphia.

Packing was tried in five cases; in four it gave relief—the temperature being lessened and the patient expressing herself comfortable after it. In one (Case VI., Class IV.), it produced symptoms of collapse; from this the woman rapidly rallied, and subsequently experienced great relief from the distressing thirst from which she had previously suffered. None of the patients, however, were permanently benefited. It is right, however, to add that it was only tried on patients whose condition afforded very faint hopes of recovery.

The process was carried out by placing the patient on a dry blanket, and enveloping her from head to foot in a sheet wrung out of cold water; this was frequently changed, the process being continued for about twenty minutes, the temperature being taken both before and after the packing.

The perchloride of iron was twice injected for the arrest of post-partum hæmorrhage; both patients recovered. Our experience of this method of treating post-partum hæmorrhage is very favourable.

It has been the practice in the hospital, for several years past, to administer a dose of ergot of rye just before the termination of labour, in all cases where the occurrence of post-partum hæmorrhage was anticipated; and also in cases of tedious or difficult labour requiring the use of the forceps, before the patient was put under the influence of chloroform, chloroform being always administered in instrumental cases; but the ergot often failed to do good, sometimes because it was vomited, sometimes doubtless because the drug had not time to be absorbed into the system, and so to produce its specific effects. I must, however, candidly say that I place no reliance in ergot in cases of post-partum hæmorrhage, at least when administered by the mouth. I have therefore, for a long time past, had recourse to its hypodermic injection, diluting the extractum ergotæ liquidum with an equal part of water, and injecting twenty or thirty minims of this solution deeply into the substance of the gluteus muscle. I have no doubt but that, so employed, ergot is more energetic than when administered by the mouth; moreover, it produces its effect much more rapidly. I repeat, however, that ergot, no matter how administered, is, in cases of post-partum hæmorrhage, an unreliable agent.

At the suggestion of Dr. Macan, ether was injected hypodermically in several cases; in one or two it produced marked improvement in the pulse, and the patient rallied wonderfully; in others it seemed to produce but little effect. It is, however, a perfectly safe remedy, and one which should be had recourse to in all cases of collapse.

In cases of rigid os uteri we rely altogether on warm hip-baths, and on the administration of the hydrate of chloral, giving usually 10 grains of this drug in an ounce of fluid every twenty minutes till 40 or 50 grains have been taken. It seems to relax the cervix, and, by allaying pain and often by inducing brief but refreshing sleep, to lengthen the intervals between the uterine contractions, which, when they recur, are generally increased in force.

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*Deaths occurring during Year ending 5th November, 1876.*

Cause of death.

CLASS I.

*Death directly traceable to the Nature of the Labour.*

Collapse and subacute peritonitis.

I. CASE I.—R. B., aged twenty-three, first labour. Confined 12th December, 1875; died, 16th. Tedious and difficult labour; os very rigid and pains inefficient. Chloral administered in 10-grain doses, without benefit; also had warm baths. After the lapse of 75 hours os still not more than half dilated, and head above brim, tongue being furred and pulse rising rapidly: long forceps were applied. Extraction occupied more than an hour. Child (deeply marked by forceps) born alive and



survived. After delivery pulse was very feeble and irregular; she never rallied thoroughly, but remained in a semi-comatose state; slight abdominal tenderness; peculiar sickening smell of breath. Died on her fourth day. Cause of death.

2. CASE II.—M. A. A., aged nineteen, first confinement. Delivered, 9th January; died, 9th. Had angular curvature of lumbar vertebrae; no pelvic deformity discoverable by vaginal examination; membranes ruptured early; os uteri rigid. Chloral  $\mathfrak{z}$ j, administered in 10-grain doses; warm bath at 1 A.M. At 8 A.M., without any symptom having presented itself to excite alarm, pulse suddenly flagged, and she became faint; no appearance of hæmorrhage. Was at once delivered with the forceps of a dead child. Died within a few hours. Post-mortem examination revealed a large rent in posterior wall of cervix, extending into body of uterus and involving peritonitis. Rupture of uterus.

3. CASE III.—E. S., aged thirty-two, fourth confinement. Delivered, 5th February; died, 7th. Previous labours difficult—all the children being dead-born. Her two last labours were instrumental: waters had escaped 12 hours before admission; os never fully dilated. When 28 hours in labour, pains being powerful, and the head still above the brim, rupture of uterus being feared, it was decided to effect delivery by turning (forceps having failed to save child in previous labours). Turning effected, under chloroform, without much difficulty; but no effort sufficed to extract head, which remained jammed in brim; finally, it became necessary to perforate behind the ear, and to use the cephalotribe. She never rallied thoroughly, and died of collapse within 48 hours. Child very large, weighing 9 lbs. 2 ozs. after perforation. Collapse.

4. CASE IV.—M. D., aged twenty-one, first confinement. Delivered 13th March; died, 20th. Admitted on 13th, having had a sharp attack of accidental hæmorrhage previously; stated also that she had had a rigor that morning; pulse on admission very rapid; first stage tedious from rigidity and inertia. Chloral in 10-grain doses administered with benefit. Forceps applied, os being  $\frac{4}{5}$ ths dilated. Peritonitis supervened on second day; sloughing of vagina before death. Peritonitis and sloughing of vagina.

5. CASE V.—C. G., aged twenty-eight, second confinement. Delivered, 3rd April; died, 18th. Placenta morbidly adherent, and so intimately attached that its removal was a matter of much difficulty; a great deal of Uncertain; probably septicæmia.

Cause of death. blood was lost; restrained by injections of cold water into uterus. 5th, temperature  $101^{\circ}$ ; pulse quick; discharge foetid; uterus washed out with Condy. 7th, some abdominal tenderness; temperature  $105^{\circ} \cdot 2$ ; *breasts full of milk*. 10th, up for an hour. 11th, had slight rigor. 12th, seemed well; removed to convalescent ward. 16th, was up; that night had a rigor. Sank rapidly and died on 18th.

Uncertain; no post-mortem obtained.

6. CASE VI.—W. W., aged thirty-five, first confinement. Delivered, 10th May; died 11th. Labour very tedious (43 hours), from early rupture of membranes, and rigidity of os. Pains frequent and inefficient; pulse quick. Chloral administered at 11 P.M. on 9th, and  $\frac{1}{2}$  grain morphia injected hypodermically. Vomited much that night. Warm bath at 4 A.M. 10th, head began to descend about noon. Tongue dry; pulse slow. Delivered by natural efforts at 6 P.M.; child dead. Slept well till 6 A.M. next morning, when she was seized with violent abdominal pain, followed by tympany. Sank rapidly, and died same day at 3 P.M. No post-mortem could be obtained.

Septicæmia following hæmorrhage.

7. CASE VII.—E. R., aged twenty-five, third confinement. Delivered 16th May; died, 23rd. Had lost an immense quantity of blood before admission, and was so weak and faint that brandy had to be freely administered. She rallied, but pulse again failed. Ether injected subcutaneously six times with benefit. Membranes ruptured; no further hæmorrhage occurred. Some uterine action set in; forceps then applied, and child extracted alive. Tenderness of abdomen complained of on second day; vomiting also set in; this subsided on 19th; then became maniacal, and died on 23rd.

Hæmorrhage.

8. CASE VIII.—R. D., aged thirty-four, second confinement. Delivered, 28th June; died, same day. Admitted suffering from hæmorrhage; os size of half-crown; membranes were ruptured, but hæmorrhage did not cease. Hand introduced and version effected without much difficulty; post-partum hæmorrhage followed, which was ascertained to proceed from laceration of cervix. Died in a few hours.

## CLASS II.

*Death resulting from, or supervening on, Diseases contracted before Admission into Hospital.*

Phthisis and pyæmia.

9. CASE I.—C. C., aged thirty, first confinement. Delivered, 8th March; died, 14th. Was phthisical; some

post-partum hæmorrhage; symptoms of pyæmia set in Cause of death.  
within 12 hours of delivery. Died on 14th.

10. CASE II.—E. B., third confinement. Delivered, Septicæmia.  
12th January; died, 20th. Ill on admission, pulse quick,  
and tongue furred; previous labours had been instru-  
mental; both children born dead. On this occasion  
head did not enter brim; pulse rose to 140; tongue  
brown and dry; forceps applied, and delivered without  
much difficulty—child alive. After delivery pulse fell to  
90, but rose subsequently; became violently maniacal  
on her sixth day.

11. CASE III.—E. C., first confinement. Delivered, Peritonitis.  
31st January; died, 3rd February. Had some hæmor-  
rhage (accidental) before admission; tongue loaded; had  
green vomiting during labour; labour very tedious in first  
stage, which was forty hours in duration. Forceps finally  
applied before os was fully dilated; extraction easy; child  
alive. Died on her fourth day.

12. CASE IV.—M. D., aged twenty-two, first confine-Phthisis and  
ment. Delivered, 4th March; died, 11th. Admitted peritonitis.  
suffering from aphonia, due to chronic laryngeal disease;  
was phthisical. Labour easy. Symptoms of subacute  
peritonitis set in within 24 hours. Sank rapidly.

13. CASE V.—A. B., aged twenty-eight, fourth con-Phthisis.  
finement. Delivered, 7th March; died, 18th. Ad-  
mitted in an advanced stage of phthisis; did well for  
first three days; gradually got worse, and died on ele-  
venth day.

14. CASE VI.—A. O'C., aged twenty-two, first con-Bronchitis  
finement. Delivered, 28th March; died, 10th April. followed by  
Admitted suffering from bronchitis, which had existed metritis.  
some days prior to admission; was in a state of great de-  
bility. Symptoms of metritis set in 48 hours after deli-  
very, much aggravated, if not induced, by constant cough-  
ing. Died on her fourteenth day.

15. CASE VII.—E. K., aged twenty-three, first con-Bronchitis.  
finement. Delivered, 11th September; died, 19th.  
Feeble and delicate; has suffered from repeated attacks  
of bronchitis. Symptoms of bronchitis set in on morning  
of third day; cough very troublesome; pains in chest;  
great dyspnoea; sputa presented a remarkable appear-  
ance, being of a greenish-blue colour. Sank on 19th.

16. CASE VIII.—E. S., aged twenty-two, first confine-Septicæmia  
ment. Delivered, 30th October; died 6th November. following  
Admitted in a most destitute condition, evidently very destitution.  
ill; temperature immediately after delivery, 105°, reduced

Cause of death. by packing to 103°, without any improvement following. Complained of intense headache on 1st November; vomiting set in on 2nd. Sank rapidly, evidently fretting greatly.

### CLASS III.

#### *Deaths occurring in Patients suffering from extreme Mental Distress.*

Mania and peritonitis.

17. CASE I.—E. R., aged twenty-four, first confinement. Delivered 5th December; died, 13th.\* Difficult labour; face to pubes. Forceps applied when 30 hours in labour; extraction difficult; some laceration of perineum; became maniacal on her third day. Symptoms of peritonitis set in immediately after; fretted greatly, having been discarded by her family in consequence of her marriage with a man of bad character, and who had been committed to gaol just before her admission into hospital.

Septicæmia and peritonitis.

18. CASE II.—A. S., aged twenty-five, third labour. Delivered, 28th December; died, 5th January. Pulse quick before delivery, and never fell. Complained of pain in abdomen on her second day; became maniacal on her fourth day; dusk-red patches subsequently appeared on her feet and legs; was fretting greatly; cause unknown.

Peritonitis.

19. CASE III.—A. D., aged eighteen, second confinement. Delivered, 24th January; died, 9th February. Admitted in a state of great destitution. Stated she had been for some time almost without food. Was fretting greatly; labour easy. Symptoms of peritonitis set in on second day; improved under treatment; but sank subsequently.

Peritonitis and destitution.

20. CASE IV.—M. H., aged twenty-five, first confinement. Delivered, 8th February; died, 14th. Both stages tedious, from inertia. Within a few hours after delivery complained of severe pain in abdomen; lochia became very foetid. On 12th erysipelatous patches appeared on buttocks. Was fretting much; had been discarded by her family, and deserted by the reputed father of her child.

Peritonitis.

21. CASE V.—B. F., aged twenty-three, second confinement. Delivered, 17th February; died, 23rd. Footling, labour tedious; 42 hours' duration. Did well for first 24 hours. Symptoms of peritonitis then set in;

\* No death had occurred in the hospital during the previous six weeks.



complained mainly of pain in legs and arms. Sank rapidly. Cause of death. Was unmarried, and very desponding.

22. CASE VI.—M. K., aged twenty, first confinement. Peritonitis. Delivered, 24th March; died, 30th. Labour easy; complained of pain in abdomen next day; pulse 130; temperature 105°. Was unmarried, and fretting.

23. CASE VII.—L. G., aged nineteen, first pregnancy. Septicæmia. Delivered, 1st April; died 6th. Labour easy; pulse very small and weak; clot expelled on the day after delivery. Lay from the first in a listless, apathetic state. Temperature on third day, 104°. Sank rapidly, without any local symptoms whatever. Was unmarried and desponding.

24. CASE VIII.—E. B., aged thirty-two, fifth pregnancy. Phlebitis. Confined, 1st April; died, 7th. Had a rigor 12 hours after delivery; was hot, skin dry, pulse quick. On 4th complained of pain in calf of leg, the veins of which were hard and turgid; temperature 105°. Intense thirst. Was wrapt in sheet wrung out of cold water, and changed frequently; temperature thereby reduced to 104°, with marked relief of thirst. 7th April, temperature 103°. Pulse very small; dark bluish patches observed on chest. Stimulants administered freely. Her husband had been in England for a year. Supposed father of her child, a married man. Was fretting greatly.

#### CLASS IV.

##### *Deaths not traceable to any predisposing cause.*

25. CASE I.—R. C., aged twenty-seven, second confinement. Pneumonia. Delivered, 31st December; died, 7th January. and septicæmia. January 2nd, pulse 120. 3rd, a measly rash was observed on the chest. Some abdominal tenderness, which subsided, but subsequently returned. Symptoms of pneumonia set in on 6th, and became rapidly aggravated; had suffered from constant vomiting all through pregnancy. Hyposulphite of sodium administered; had to be discontinued, as it purged.

26. CASE II.—M. D., aged twenty-four, second confinement. Peritonitis. Delivered, 12th January; died, 18th. Had slight post-partum hæmorrhage. Complained of severe pain in abdomen next day. Died on the sixth day.

27. CASE III.—A. C., first confinement. Pneumonia. Delivered, 20th February; died, 1st March. Labour easy; pulse 130, and abdomen tender day after delivery; appeared to be progressing favourably, but was suddenly attacked

Cause of death. with pneumonia on her seventh day ; this rapidly proved fatal.

Septicæmia. 28. CASE IV.—M. K., aged twenty-five, first confinement. Delivered, 22nd February ; died, 2nd March. Labour tedious (56 hours), from rigidity of os. Second stage occupied but 3 hours. 8 hours after delivery, pulse 120, face flushed. 24th, slight tenderness over abdomen ; temperature  $105^{\circ}$ . 27th, became maniacal ; red blush over knuckles. 29th, elbow painful ; abdominal tenderness quite gone two days preceding death.

Peritonitis. 29. CASE V.—A. D., aged twenty-four, first confinement. Delivered, 26th March ; died, 1st April. Patient very delicate ; very protracted first stage (40 hours) ; second stage rapid (30 minutes) ; *had rigor shortly after delivery*. Symptoms of metritis on 28th. Treated by exhibition of quinine and morphia ; brandy administered freely. 30th, great tympanitis. Sank very rapidly, and died on her fifth day. Perineum lacerated ; had become very unhealthy for two days previously.

Pyæmia. 30. CASE VI.—E. H., aged twenty-nine, second confinement. Delivered, 30th March ; died, 7th April. Pain in abdomen on 1st April ; pulse quick ; tongue dry ; diarrhoea set in on 4th ; temperature  $104^{\circ}2$  ; elbow red and painful ; back of hand also painful and swollen. Packed in wet sheet, but she seemed to suffer greatly from the shock ; pulse became almost imperceptible, and features pinched. Sheet immediately removed ; ether injected hypodermically. She rallied, and tongue became quite moist (previously very dry), but she sank and died next day.

Bronchitis. 31. CASE VII.—W. S., aged twenty-one, first confinement. Delivered, 1st April ; died, 10th. In bad health for more than a month before confinement. Child dead and putrid ; had been dead probably for three weeks. 3rd April, hot and feverish ; 4th, vomited ; a portion of membranes came away with the lochia ; 5th, temperature  $104^{\circ}4$  ; 7th, temperature  $104^{\circ}3$ . Four wet sheets applied in succession. Stated that they felt agreeable ; temperature reduced to  $102^{\circ}$ . 8th, better. 9th, symptoms of general bronchitis ; chest blistered. Died, 10th.

Septicæmia. 32. CASE VIII.—T. B., aged twenty-seven, first confinement. Delivered, 6th April ; died, 8th. Waters escaped before admission. First stage occupied 9 hours ; second, rapid (45 minutes). Delivered at 4.30, 6th April ; 7th, at 7 A.M., was seized with violent rigor, followed immediately by uncontrollable vomiting, which never

ceased till death supervened. Sank rapidly; died in 24 hours. Cause of death.

33. CASE IX.—E. H., aged twenty-two, first confine-Septicæmia  
ment. Delivered, 3rd May; died, 11th. 5th, pulse 145. and peri-  
Complained of pain, on pressure, over abdomen. Breath tonitis.  
had peculiar cadaveric smell. 7th, passed under her,  
and soon after vomited; features pinched; much tym-  
pany; respiration jerky, and long interval between the  
acts. Sank gradually, and died on 11th.

34. CASE X.—M. S., aged twenty-three, first confine-Septicæmia  
ment. Delivered, 4th June; died, 12th. Rigor on 5th, and peri-  
followed by tenderness of abdomen, tympany, &c. Be- tonitis.  
came maniacal on 10th.

35. CASE XI.—T. M., aged nineteen, first confine-Septicæmia  
ment. Delivered, 13th October; died, 21st. First stage and peri-  
very tedious (52 hours) from rigidity, with complete tonitis.  
inertia in second. Delivered with forceps. Symp-  
toms of peritonitis set in 24 hours after delivery; red  
patches subsequently appeared on legs; pneumonia of left  
lung.

EXTERN MATERNITY DEPARTMENT.

I regret to say that the statistics of this department of the institu-  
tion are imperfect and unreliable. In the first instance, the Clinical  
Clerk, whose duty it now is to visit the patients and record the  
results, was not appointed till the 1st May, when six months of the  
clinical year had expired; and even under the improved system, I  
fear that anything approaching the accuracy of the records of the  
patients delivered in the hospital will be impossible.

For the following tables I am indebted to Mr. Dobbs, Clinical  
Clerk:—

Number of natural labours -	-	-	547
Difficult, complex, or preternatural -	-	-	56
Abortions -	-	-	35
Total			638

I may here point out that the number of patients  
attended in their own homes during the pre-  
ceding year was only - 275  
Thus, there was as a result of the new arrange-  
ments an increase in the year of - 363  
Of presentations of the upper extremity there  
were - - - 0  
Of presentations of the lower extremity there  
were - - - 19

## COMPLEX CASES.

Prolapse of funis	-	-	-	3
Hæmorrhage	{ post-partum	-	-	16
	{ accidental	-	-	6
	{ unavoidable	-	-	2
Twins	-	-	-	9
Convulsions	-	-	-	1
Rupture of uterus	-	-	-	0
Prolapse of uterus*	-	-	-	1
Retained placenta	-	-	-	11

## ABNORMAL CONDITIONS.

Anencephalous monster	-	-	-	1
Mole pregnancy	-	-	-	1
The forceps was applied sixteen times, namely :—				
For prolapse of funis	-	-	-	1
For tedious labour	-	-	-	15
Version performed three times :—				
For presentation of funis	-	-	-	1
For placenta prævia	-	-	-	2
Perforation and cephalotripsy	-	-	-	1

## PART II.—THE AUXILIARY HOSPITAL FOR DISEASES PECULIAR TO WOMEN.

The total number of patients admitted into this hospital, suffering from the various forms of uterine and ovarian disease, was, during the clinical year, 314. The number would have been larger had not some of the wards been closed during the summer, while the extensive repairs and alterations undertaken by the governors were being carried out ; besides, it was not until the month of March that some of the wards in this hospital, which had been previously used as lying-in wards, were appropriated to chronic cases.

*Classification of Cases.*

	Cases		Cases
Abscess of breast . . . . .	1	Eclampsia . . . . .	1
Abscess of labium . . . . .	3	Fibroid tumours . . . . .	9
Anteflexion . . . . .	15	Fibro-cystic tumours . . . . .	1
Amenorrhœa . . . . .	5	Gonorrhœa . . . . .	1
Cellulitis (pelvic) . . . . .	12	Granular Erosion (of cervix) .	9
Cancer, medullary . . . . .	5	Hæmatocele (pelvic) . . . . .	1
Cystitis . . . . .	2	Incontinence of urine . . . . .	1
Dysmenorrhœa . . . . .	16	Leucorrhœa . . . . .	4
Endometritis . . . . .	32	Metritis (chronic) . . . . .	8
Endocervicitis . . . . .	11	Menorrhagia . . . . .	8
Epithelioma (of cervix) . . . .	5	Metrorrhagia . . . . .	5
Epithelioma (of vagina) . . . .	1	Ovarian tumours . . . . .	6

\* The os uteri was outside the vulva before labour set in and during its progress.



	Cases		Cases
Ovaritis . . . . .	3	Retained ovum . . . . .	3
Pelvic tumours . . . . .	5	Retroflexion . . . . .	18
Polypus . . . . .	8	Subinvolution . . . . .	9
Phlegmasia . . . . .	1	Vesico-vaginal fistula . . . . .	4
Peritonitis . . . . .	2	Vaginitis . . . . .	7
Prolapsus uteri . . . . .	3	Vagina duplex . . . . .	1
Prolapse of ovary . . . . .	1	Vaginal cicatrices . . . . .	2

I have experienced much difficulty in drawing up the foregoing apparently simple list; the difficulty arose from the fact that in many cases two or three abnormal conditions existed in the same patient. Thus, in all the cases of polypus, menorrhagia existed. It was also a prominent symptom in many of the cases of endometritis, while subinvolution, antelexion or retroflexion, and endometritis, were frequently coexistent. The foregoing table must, therefore, be only taken as approximately correct. It has, however, been made with the greatest possible care.

It would be out of my power to give, in a report such as this, even in the most cursory manner, a *résumé* of all the foregoing cases, and I shall content myself, while dwelling on a few of the most important, to point out the principles which guided us in our treatment of certain of these affections.

*Dilatation of the Uterus* was carried out in 22 patients. The reasons which influenced us in so doing were various; in some the diagnosis of polypus, of retained ovum, or of granular endometritis, was previously made, but in about one-third of the number the operation was undertaken as a necessary step to enable us to decide on the nature of the case. For many years past I have acted on the principle laid down by the late Dr. Tanner, that "when an otherwise healthy woman suffers from repeated attacks of uterine hæmorrhage, which can only be partially or temporarily relieved by rest, astringents, &c., we may be sure that there is some organic disease of the ovaries or uterus;" and the cervix being healthy, that "there is only one plan of treatment which can be adopted with reasonable hope of success, and that is to dilate the os uteri and cervix thoroughly," so as to permit the exploration of the interior of the organ, and "the removal of the source of evil." The method of dilating the uterus is well known to all the members of the Society, and I shall merely say that in the Rotunda Hospital we almost invariably use for that purpose sea-tangle tents.

In three cases dilatation was practised for the removal of the products of conception. The following are the particulars of these cases:—

A. M., aged thirty, admitted 10th April, 1876, married twelve years; has had eight children—the youngest eighteen months old; nursed this child for eleven months; has been in bad health since its birth, suffering specially, since August last, from severe pain in her back, and *since Christmas has had a red discharge almost con-*

*tinuously*. Walking brings on violent bearing-down pains. She was, on admission, in a very debilitated state; the discharge was copious, sanguineous, and foetid. On making a vaginal examination the uterus was found to be much enlarged, the fundus being thrown forward; the os, which was patulous, being very far back.

The history of this patient's case negatived the idea of the existence of an intra-uterine polypus, but the uterus evidently contained something which acted as a foreign body, and which kept up the weakening discharge. The woman herself believed that she had aborted several weeks previously. I came to the conclusion that she had been pregnant, and that some portion of the ovum was retained. I therefore resolved to dilate the uterus, and accordingly introduced eight pieces of sea-tangle into the uterus; the os being patulous and cervix relaxed, this was effected without difficulty. A very foetid discharge escaped on withdrawing these, and before proceeding further it became necessary to syringe out the vagina and uterus with a disinfecting fluid; this brought away several large cheesy-looking masses, which, on subsequent examination, proved to be clots of blood, perfectly decolorised. On passing the finger into the uterus I detected the lower extremities of a foetus. These were seized with the ovum forceps, and a foetus of about the third month extracted, which, though macerated, was not in any way decomposed. Some trouble was experienced in removing the placenta from the fact of its being extremely friable, but, with the aid of the ovum forceps, it was all got away. Sharp hæmorrhage followed, which was checked by the injection of water. This patient made an excellent recovery.

In this case we were quite uncertain as to the date of conception. The patient had not menstruated since her confinement, while for sixteen weeks prior to admission she had never been free from a sanguineous discharge. My impression is that she became pregnant soon after the time when she ceased to nurse—namely, about the 1st September, that the ovum was blighted early in December, and that the dead ovum was retained *in utero* from that date till its removal on the 13th April. It is unlikely that pregnancy took place after the hæmorrhage set in at Christmas. That the ovum was dead for a long time was proved from its appearance, and the complete decolorisation of the clots of blood show that they must have been for a long time in the uterus.

Another case was that of M. C., admitted 18th September, 1876. She had given birth to two children, the youngest of whom was eleven months old. She had suffered from uterine hæmorrhage almost without intermission since her last confinement, except during the months of June and July. For the last six weeks this discharge had been constant, sometimes very profuse, and she believed that she had aborted at or about the 1st August. On examination the uterus was found to be enlarged and globular, the cervix soft, and os patulous; being of opinion that some portion of the ovum must be

retained, the uterus was dilated, and an ovum of about the 10th week removed.

The third case was that of M. M'M., aged twenty-five, admitted on the 10th September, suffering from profuse uterine hæmorrhage. She stated that three months previously, when eight weeks pregnant, she had a violent attack of hæmorrhage, and she believed then aborted. The present attack of hæmorrhage had lasted fourteen days. The hæmorrhage, on admission, was so profuse that the vagina had to be plugged; this arrested it. On making a vaginal examination the fundus of the uterus, much enlarged, was found to occupy the recto-vaginal cul-de-sac, the os being patulous; the uterus was dilated, and, on passing the finger up to the fundus, a soft, spongy mass was detected. This was removed with the curette, and fuming nitric acid freely applied; the mass removed seemed to be a portion of placenta, much degenerated. This patient left the hospital, quite well, in ten days.

*Endometritis.*—Dilatation was carried out in eight cases of endometritis, in which a granular condition of the intra-uterine mucous membrane existed. The following is an example of these cases:—

S. D., aged forty-four, admitted 2nd September, has had seven children, and three miscarriages, the last six years ago; has suffered ever since from dysmenorrhagia, with occasional attacks of menorrhagia, which have of late become more severe. Recently the intervals between the periods have never exceeded fourteen days, sometimes being only four or five days, while the flow lasts very profusely for nine or ten; of late, indeed, she has seldom been free from a red discharge. She states that she has been treated for two years for "ulceration of the womb," without benefit.

On examination the sound penetrated to the depth of  $3\frac{1}{2}$  inches. When the point reached the os internum much pain was experienced; pressure of the point, too, against the fundus caused pain.

14th September.—Six pieces of sea-tangle introduced; on their removal the finger passed into the uterus detected a rough granular condition of the intra-uterine surface. This was removed with the curette, and nitric acid freely applied.

25th September.—No pain subsequent to the operation. Hæmorrhage entirely ceased.

25th October.—States that she is now perfectly well; has had no return of pain or of the discharge.

Cases of which this is a type are by no means rare, and very little good will be effected by any treatment which does not aim at restoring the intra-uterine mucous membrane to a healthy condition by the use of some strong caustic applied directly to it, while in many cases the use of the curette is essential.

*Division of the Cervix Uteri.*—This operation was performed five times. In each patient the prominent symptom was dysmenorrhœa; in three ante flexion was well marked, in all endometritis existed, and in each case where the operation was performed it was undertaken as

the first step towards the cure of that affection, which in it was, in my opinion, the cause of the dysmenorrhœa. I believe it is seldom possible to cure chronic endometritis occurring in sterile women without having recourse to free division of the cervix.

In this hospital we practise both the bilateral division, as advocated by Simpson, Greenhalgh, and others, and also Marion Sims' operation—namely, the incision of the posterior wall of the cervix uteri only; the former operation answers very well when the uterus is straight, but is far inferior to the latter in cases where anteflexion exists. Formerly I seldom performed any operation except the bilateral one, using for the purpose Savage's metrotome and Küchenmeister's scissors, but of late I have practised Marion Sims' operation more frequently than the other, with very satisfactory results, being led to do so from the fact that anteflexion so commonly coexists with endometritis, especially in barren women. Here is an outline of one of the cases:—

S. K., aged twenty-three, admitted 26th September, states that she had never been pregnant, that she began to menstruate at seventeen, without discomfort, and continued to do so till twelve months ago, when the function became painful, and the discharge very scanty, lasting but one day instead of three; suffers at each recurrence of the period from nausea, and sometimes actually vomits; describes the pain as "agonising."

On a vaginal and bi-manual examination the uterus was found to be acutely anteflected, the os was patulous, the passage of the sound, and specially pressure of the point against the fundus, causing great pain; a copious glairy discharge issued from the os. Diagnosis: endometritis, supervening on congenital anteflexion.

28th September.—Cervix uteri divided posteriorly.

16th October.—Menstrual period over; lasted four days. No pain.

9th November.—Has again menstruated, without pain; flow lasted four days. Endometritis treated during the intra-menstrual period by the application of carbolic acid to the interior of the uterus.

*Amputation of the Cervix Uteri* for epithelioma of that portion of the organ, was performed three times. In one of these cases, in which the disease was in a very advanced stage, the cavity of the peritoneum was opened during the operation, and the patient died in the course of a few hours. The details of this case have been already laid before the Society by me. In the second case the growth was rapidly reproduced. Subsequently, having had the pleasure of hearing Dr. Marion Sims describe his new operation, of following the disease right up into the cervix uteri, and removing every portion of it which can be recognised, I procured his knife from Collin, of Paris, and attempted to imitate him. In the case on which I operated I succeeded without any serious loss of blood, in not only removing the outgrowth, but also in dissecting out the inner surface of the cervix, up to the os uteri, and in removing apparently every portion of the diseased tissue. Some days subsequently I packed the hollow cervix



with cotton soaked in a solution of the chloride of zinc. This patient improved greatly for a time ; the disease, nevertheless, recurred. I mean, however, as suitable cases occur, to practise this operation hereafter, as it seems to me to be a safe one, and to afford the best chance of prolonging, if not of saving, the patient's life.

*Granular Ulceration of the Cervix.*—Several cases of the severe form of this affection were admitted during the year ; most of these had previously been treated in the extern department without benefit, and in each of these, milder measures having failed, potassa fusa was freely applied, in all with benefit. Our experience in the treatment of this affection is, that nitrate of silver, and even the fuming nitric acid, is insufficient for the cure of the severe forms of it, and that where the cervix uteri is soft and spongy and bleeds on being touched, it is necessary to destroy the whole vaginal aspect of the cervix to a considerable depth. Our custom is to leave in the vagina, after the application of the caustic, a pledget of cotton saturated in glycerine, which tends to lessen any pain or uneasiness which may follow the application. As a rule the slough separates in four or five days, leaving a healthy surface, which heals up in a short time. Our experience of this method of treating the affection under consideration is very favourable.

*Double Vagina with Single Uterus.*—A remarkable example of this rare affection was admitted in June last. The patient was a woman aged forty-three, who had been married for many years, but had never conceived ; menstruation had always been normal, and sexual intercourse neither difficult nor painful, till of late ; at the age of forty the catamenia ceased to appear, and not long after she began to suffer from pain in the left inguinal region ; this for a time disappeared, but subsequently she suffered from backache and from pain and heat in the vagina and at the vulva. On examination a septum was found to run throughout the whole length of the vagina, dividing that canal into two parts of unequal size ; it extended over the cervix uteri, the os being situated in the anterior portion, and terminated just inside the labia minora ; the os uteri was small and circular, the cervix conical, and the uterus small, giving the impression that the organ had never been fully developed. The woman was suffering, on admission, from vaginitis, and it was for the relief of the sufferings due to this affection that she sought admission.

Believing that much of her sufferings were due to the existence of the septum, which, by narrowing the vagina, appeared to render intercourse painful, I divided it with a pair of scissors throughout its whole length ; the septum was dense, and, on being divided, retracted, forming a thick ridge on either wall of the vagina, laterally. Pledgets of cotton, saturated with glycerine, were then placed in the vagina, and she was discharged in a few days. Since then she has presented herself from time to time at the dispensary ; the vaginitis has not been entirely removed, and the introduction of the speculum causes much pain, from the fact that puckered-up edges of the septum pro-

ject into its orifice ; as it is passed up the division of the septum does not appear to have materially improved her condition ; sexual intercourse is, however, not so painful as formerly. The most remarkable fact connected with this case is that for many years sexual intercourse appears to have been painless, while as life advanced, and the climacteric period approached, it became absolutely unbearable. I can only explain this by supposing that the septum became more dense as age advanced, and finally narrowed considerably the diameters of the vagina.

*Fibrous Tumours of the Uterus.*—The number of women the subjects of fibrous tumours presenting themselves at the dispensary or applying for admission into the auxiliary hospital was very great. The great majority of these were cases not likely to be benefited by treatment, and consequently were not admitted. Nine were so, and were kept under treatment for periods varying from a week or two to several months. In this report I have not space to enter into details of the methods employed to arrest hæmorrhage and check the growth of these tumours. I can only say at present that we practised incision of the cervix, the use of the actual cautery, as recommended by Dr. Greenhalgh, the injection of styptics into the cavity of the uterus, and the hypodermic injection of ergot, with moderate success. In none of the cases was enucleation or forcible evulsion practised.

*Ovariectomy* was performed twice unsuccessfully. In one case death was due to shock, the density of the adhesions rendering the removal of the cyst a matter of the greatest difficulty. In the other cirrhosis of the liver was found on a post-mortem examination, which, in the absence of any symptom indicating hepatic disease, was not suspected during life.

I much regret that the limits to which I must necessarily confine this report renders it impossible for me even to touch on many interesting subjects. I trust, however, next year to make the report of this department of the hospital somewhat more full than it is on the present occasion.

Surgeon-Major JOHNSTON said that there appeared to have been a particular current of puerperal infection during the year. It would have been satisfactory if, according to the practice of Dr. Johnston, the wards and beds in which the cases were delivered, and also the nurses who attended, had been given.

Dr. MORE MADDEN had no doubt that puerperal diseases were excessively contagious. He thought some of the women who died might have been alive still if delivered in the squalor of their own homes, and that the out-door treatment of lying-in patients had many advantages.

Dr. HENRY KENNEDY thought that puerperal diseases occurred in private exactly at the same time as in the hospitals, and that they were more numerous, in proportion, outside the hospitals than in

them. In one epidemic he had found, in many cases, no peritonitis, but sloughing of the subperitoneal cellular tissue.

Dr. DENHAM thought that some patients were delivered with the poison of puerperal fever lurking in their system beforehand. He could not otherwise conceive it possible for a woman to have an easy labour, and to manifest symptoms of puerperal fever in six or eight hours afterwards.

Dr. ATTHILL thought that there could not be any poisoning of the atmosphere, or hanging of germs about the walls of the hospital, since not a ward in the hospital had been closed, and yet, in the last six months, they had only had six deaths from all causes out of some 600 cases. He thought the vast majority of cases of so-called puerperal fever were self-generated, whether occurring in the hospital or in the country.

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## Obstetric Summary.

### *Dystocia produced by Hydatid Tumours of the Pelvis.*

Dr. Wiener relates a case in which delivery was obstructed by a retro-uterine hydatid tumour. The patient was a primipara, twenty-six years old. She had always had good health, but, a vaginal examination having been previously made, a medical practitioner had informed her of the existence of a pelvic tumour, from which she had never had any inconvenience. The pains commenced on the morning of August 6th, 1875. An examination was made the same evening, and above the pubes was discovered a rounded elastic tumour, somewhat to the right of the middle line, and as large as two fists. It gave no fluctuation. It was slightly movable, and was connected with the uterus by a short band directed backwards, and another band was felt directed backwards and to the right. Douglas's fossa was occupied by two elastic tumours side by side, the left as large as a fist, the right as large as an apple. Although not very hard, they gave the impression of solid swellings. They could not be pressed up into the abdomen either from the vagina or the rectum. The cervix was displaced forwards, above the pelvic brim. The patient was transferred into hospital in expectation of great difficulty in effecting parturition, and further efforts were made under chloroform, to push up the tumour, but without success. The left tumour was then punctured from the rectum, and 200 grammes of turbid, yellowish fluid escaped. The right, or smaller tumour, was also punctured from the vagina, and similar fluid let out. At the same time the membranes were accidentally ruptured. At 6 A.M., on August 7th, the pains were vigorous. The os was fully dilated, and the head almost completely passed through the brim, being not far from the floor of the pelvis. The urine contained blood, and the foetal heart-sounds could no longer be heard. The head was then perforated

through the anterior fontanel, and the cranioclast applied. On two occasions the bones gave way, and the head failed to descend, but it was at length extracted by powerful traction, the instrument being applied over the left side of the face. After delivery a rent was observed at the left side of the cervix. The patient had symptoms of acute peritonitis, and died at 9.30 A.M. on the following day. At the autopsy the uterus was found adherent to surrounding parts, with numerous hydatid cysts, before, behind, and at both sides. There was also a cyst in the great omentum, and a smaller one in the liver. There was a rent on the left side of the cervix from the inner os reaching nearly to the outer. On the same side there was effusion in the cellular tissue and laceration of the peritoneum. There was also chronic and acute peritonitis. The author believes that the rupture was due to one of the cysts which escaped puncture having become impacted between the neck or shoulders and the pelvic wall, and prevented the descent of the foetus.

The author reviews the history of six other recorded cases of dystocia from a similar cause. From these it is shown that the tumour is generally situated in the cellular tissue, posterior to the uterus, or a little to one side, and it is therefore hopeless to attempt to push it up above the brim. On account of the increased pressure produced by the pregnant uterus, it is generally so tense as to afford no fluctuation, but gives the impression of a firm tumour. Hence, in two cases, Cæsarian section was performed, in the belief that it was solid. In no case could the hydatid thrill be detected. The diagnosis from ovarian cyst may be impossible, except by means of exploratory puncture; for the characteristic given by Mr. Spencer Wells, that a hydatid tumour generally is first noticed in the upper part of the abdomen, and only later appears in the pelvis, may often fail. After puncture or incision of the cyst, delivery was soon effected in the five cases in which this was done, and the author's case was the only one which did not end in recovery. Protracted suppuration, however, took place in most. The two cases in which Cæsarian section was performed ended fatally. The dangerous nature of hydatid tumours of the pelvis, compared with similar tumours in other situations, is shown by the fact that, of thirty-one cases of pelvic hydatid cysts, collected by Davaine, there were only five which did not end in death. Of these three were the cases already referred to, in which puncture or incision was performed, on account of the complication with parturition.—*Archiv. für Gynackologie*, B. xi. H. 3.

In the following number of the same periodical, Dr. Haussmann adds three recorded cases, overlooked by Dr. Wiener. In the first of these spontaneous evacuation by the vagina occurred immediately after delivery. In the second, the head became arrested near the outlet of the pelvis. Forceps were applied, and strong traction made for an hour and a half without effect, the head constantly receding when the traction was relaxed. During the traction an elastic swell-



ing, as big as a large walnut, was noticed in the cellular tissue between vagina and rectum. It became flattened out, and imperceptible, when traction was intermitted. The swelling being scratched by the nail from the vagina, the mucous membrane gave way, and a black cyst, as large as a fist, became prolapsed through the opening. This was ligatured and removed, and proved to contain hydatids. A dead child was then extracted, and the patient did well, and had no recurrence of the parasite. In the third case, the cyst was situated between uterus and bladder, the only instance in which this situation is recorded. Delivery was effected by instruments, subserous rupture of the anterior uterine wall took place, so that the cyst projected into the uterine cavity, and the patient died. The peritoneal cavity was full of multiple hydatid cysts.—*Archiv für Gynäkologie*, B. xi. H. 3.

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*The Use of Hot Baths in Secondary Puerperal Hæmorrhage.*

Dr. Bailly relates two cases in which a striking and rapid success followed the use of hot baths in secondary puerperal hæmorrhage according to the plan recommended by Dr. Tarnier. The first was that of a patient in whom hæmorrhage commenced eighteen days after delivery, no abnormal loss having previously occurred. The uterus was enlarged, and could be felt two finger-breadths above the pubes. Although not in amount sufficient to cause serious alarm, the loss, consisting of liquid blood and clots, persisted most obstinately for ten days. Injections of dilute perchloride of iron, and the administration of ergot and hæmostatic mineral waters, proved of little avail. The introduction into the vagina of tampons of charpie soaked in perchloride of iron suspended the loss for twenty-four hours, but it then recurred as persistently as ever. Dr. Tarnier, being called in consultation, recommended the use of hot baths. After the first bath the loss was much diminished; after the second, it was completely suspended. It recurred at the end of thirty-six hours, but was finally arrested by a third bath. The process of involution was rapidly completed, and, at the end of a week, the patient was able to get about.

In the second case the hæmorrhage set in twenty-seven days after delivery, when the patient had already been able to walk about her room for twelve days. It was at first slight and intermittent, but afterwards became continuous and profuse. The cervix was soft, and readily admitted the finger; the uterus was as large as at the third month of pregnancy, and was felt considerably above the pubes. She was treated by complete rest in bed, with ergot, cold vaginal injections, and cold enemata, but without result. This continued for six days, large clots being frequently passed. A hot bath of twenty minutes' duration was then prescribed, the patient very reluctantly consenting to this treatment. After the first bath the hæmorrhage entirely stopped. It was renewed the following day, and continued

in slight degree for twenty-four hours, but was finally arrested by a second bath.

The author attributes the good effect to the relief of uterine congestion consequent upon the dilatation of cutaneous capillaries produced by the hot baths, the resulting determination of blood to the surface, and diminished vascularity of deep-seated organs. The plan of treatment was first taught by M. Salgues, formerly Professor of Clinical Medicine at Dijon, under whom M. Tarnier had studied. The author has found it more efficacious in the second phase of the hæmorrhage than at its outset, and he considers it unsafe to resort to it earlier than ten days after delivery. The baths are given at the temperature of about 34° C., and the duration of immersion varies from twenty minutes to half an hour.—*Archives de Tocologie*, November, 1877.

#### BOOKS, PAMPHLETS, AND PAPERS RECEIVED.

"Cyclopædia of the Practice of Medicine." Edited by Dr. H. von Ziemssen. Vol. XIV. "Diseases of the Nervous System and Disturbances of Speech." Sampson Low & Co. Pp. 893.

"On the Nature, Origin, and Prevention of Puerperal Fever." By W. T. Lusk, M.D. Philadelphia: 1877.

"On the Treatment of Psoriasis by an Ointment of Chrysophanic Acid." By Balmanno Squire, M.B. London: J. & A. Churchill, 1878. Pp. 99.

"Ueber Retentioncysten der Weiblichen Harnröhre bei Neugeborenen und ihre Beziehung zur Entwicklung der Karunkel." Von Dr. Jos. Englisch.

"On the Treatment of Chronic Eczema by a Glycerole of the Subacetate of Lead." By Balmanno Squire, M.B. Second Edition. London: J. & A. Churchill, 1878.

"Battey's Operation." By J. Marion Sims, A.M., M.D. London: T. Richards, 1878.

"Livmoderens Leie." Af Dr. Med. Vedeler. Christiania.

"De l'Amputation du Col de l'Uterus." Par le Dr. A. Leblond. Paris: 1877.

"Beschreibung eines Menschlichen Eichens aus der Zweiten bis dritten Woche der Schwangerschaft." Von Dr. Hermann Beigel und Dr. Ludwig Löwe.

Communications received from Prof. Stephenson, Dr. Young, Florence, Dr. Ashburton Thompson, Dr. de Gorrequer Griffith, Dr. G. Hamilton, Dr. Herman, Dr. Sloan, and Dr. Godson.

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## GENERAL INDEX.

---

- A**BORTION, specimen of an, at six weeks, by Dr. Keiller, 120
- Adams, Mr. W., infantile paralysis, the clinical history of cases with rigid and those with flaccid muscles, 710
- "After-pains," the systematic prevention of, by Dr. Young, 747
- Agnew, Dr. T. W., the forceps in certain breech presentations, 544
- Aikman, Dr. J., on a form of infantile pyrexia associated with disordered bowels, 447
- American Gynæcological Society, transactions of the, review, 526
- Anteflexion, the etiology of, by Dr. Müller, 71
- Atthill, Dr. Lombe, specimen of a very large myxomatous tumour, 128; epithelioma of cervix uteri—operation, 136; specimens of extra and intra-uterine polypi, 198; the relations between erysipelas and puerperal fever, 209; a hand-spray for injecting perchloride of iron into the uterus, 546; on transfusion in post-partum hæmorrhage, 546; specimen of a very large ovarian cyst, 610, 817; Dr. Tarnier's midwifery forceps, 817; report of the Rotunda Hospital (1876), 818
- Aveling, Dr. J. H., influence of posture on women, 1; a revolving needle, 42
- B**AILLY, Dr., use of hot-baths in secondary puerperal hæmorrhage, 841
- Bantock, Dr., the treatment of perineal ruptures (reply to Dr. Chambers), 94
- Barnes, Dr. Fancourt, specimen of obstetric phantom designed by Drs. Budin and Pinard, 606
- Barnes, Dr., apparatus for exhibiting uterine injections after delivery, 191; pessary for complete procidentia uteri, 191; an instrument for application of perchloride of iron to the cavity of the uterus, 250; a flexible galvanic intra-uterine stem pessary, 250; address in obstetric medicine delivered at the forty-fifth annual meeting of the British Medical Association, 457; specimen of cancer of the body of the uterus not affecting the cervix, 811
- Bassett, Dr., case of general dropsy in the foetus with hypertrophy of the placenta, 675
- Bauer, Dr. A., case of imperforate hymen, 285
- Beigel, Dr., accessory ovaries, 285
- Bordier, Dr., the constitutional relations of membranous dysmenorrhœa, 283
- Boulton, Dr. P., on the treatment of chronic inflammation and simple ulceration of the os and cervix uteri, 319
- Boyd, Mr. M. A., syphilitic and other tumours of the labia and clitoris, 199
- Bozeman, Dr. W., instruments for the treatment of vesico-vaginal fistulæ and atresia vaginæ, when complicating that condition, 114; on kolpoplexis and other allied procedures as means of treating vesico-vaginal fistulæ, 170, 233, 309
- Braithwaite, Dr. James, new mode of treating certain cases of retroflexion of the unimpregnated uterus, 192
- Breisky, Prof., the treatment of fissures of the os uteri by plastic operation, 349
- Brickell, Prof., the treatment of pelvic effusions by puncture, 284
- British Medical Association, address, "The Scientific and Political Position of Obstetrics," by Dr. Barnes, 457; address, "The History of Obstetric Medicine in Manchester," by Dr. Priestley, 531
- Broad-ligament, the diagnosis of cysts of the, by Prof. Gusserow, 68
- Bruce, Dr., the resuscitation of still-born children, with cases, 749
- Bryne, Dr. J. A., the distended colon, bound down in the retro-uterine space, supposed, during life, to be a collection of pus, 817
- Budin, Dr., hæmorrhage from the vaginal walls after delivery, 282; specimen of an obstetric phantom, 606; on a diag-

- nostic sign of vaginal hæmorrhage during parturition, 607
- CÆSARIAN** section, specimen of the viscera from a case in which, was performed by Dr. Squire, 325; successful case of, by Dr. Jenks, 626
- Calculus, specimen of a phosphatic, from female bladder, by Dr. Kidd, 546; specimen of an oxalate of lime, from female bladder, by Dr. More-Madden, 546
- Carmichael, Dr., specimen of a foetus at sixth month, 685; specimen of an anencephalous foetus born co-twin with a healthy child, and the placenta, which were separate, 747
- Cephalotribe or Cranioklast, by Dr. Max Wiener, 625
- Cervix uteri, incision of the, by Dr. Heywood Smith, 31; epithelioma of the, operation, by Dr. Atthill, 138; epithelioma of the, cured by the injection of chloride of zinc, by Dr. Guichard, 213; conditions of the, in the latter months of utero-gestation, with a specimen, by Dr. Angus Macdonald, 268; treatment of chronic inflammation and simple ulceration of the os and, by Dr. Boulton, 319; treatment of fissures of the, by plastic operation, by Prof. Breisky, 349; hypertrophy of the supra-vaginal, by Dr. Guérin, 703; parturition obstructed by carcinoma of the, by M. Depaul, 775
- Chambers, Dr. T., treatment of ruptures of the perineum, 34; specimen of a large uterine tumour, 814
- Chassagny, M., mechanical appliances for traction with midwifery forceps, 347
- Chloroform, use of, in "stammering of the uterus" during pregnancy, by Mr. James, 524
- Church, Dr. H. M., notes on a case of hemiplegia in a child following the application of the forceps at birth, 401
- Churchill, Dr. Fleetwood, cases of polypus uteri, 618
- Coates, Mr. W. M., malignant tumours of both ovaries successfully removed, 411
- Craig, Dr., specimen of an entire ovum, 268; specimen of the nails of a newly-born child of unusual length, 686
- Cumming, Dr. James, note on the use of the stethoscope in obstetrics, 473
- Cuthill, Dr., the therapeutic action of the secale cornutum, 259; case of patent foramen ovale occurring in live birth, 476
- Colon, distended, and bound down in the retro-uterine space, supposed during life to be a collection of pus, by Dr. Bryne.
- DAVIS**, Dr. Hall, abdominal section for extra-uterine foetation, 346
- Degeneration, acute fatty, in infants, by Prof. Hecker, 287
- Denham, Dr. J., specimen of extra-uterine polypus, 341
- Depaul, M., parturition obstructed by carcinoma of the cervix uteri, 775
- Dibarder, Dr. Le, chronic inversion of the uterus of thirteen years' standing cured by pregnancy, 215
- Diphtheria, notes on, by Dr. Kennedy, 128; by Dr. Kinkead, 407
- "Diseases of Women," by Mr. Tait, review, 728
- Dohrn, Prof., a married hermaphrodite, 414
- Doyle, Dr. J. P., some cases of disease of the uterus in connexion with the use of alcoholic stimulants, 403
- Dublin Obstetrical Society, meetings of, 128, 198, 333, 403, 546, 610, 817
- Duncan, Dr. J. Matthews, five cases of complete inversion of the uterus; with remarks on the operation for chronic inversion, 48; specimen of a "siren" foetus, 120; some of the relations of the foetal head to rupture of the perineum and injuries of the external genital organs, 120; specimen illustrating friability of the umbilical cord, and the so-called torsion of the cord, 257; specimen of a peculiar hydro-rachis in a foetus, 258; specimen of a remarkable encephalous foetus, 259; a peculiar form of vaginal hernia, 265; cases of procidentia uteri, 687; note on two contrasted forms of weak labour, 705; a preparation illustrative of diseased kidneys of the foetus, 746; case of labour impeded by enlargement of the foetal kidneys, 753; case of labour complicated by prolapse of the leg, 755; specimen of general cancer of the body of the uterus, not affecting the cervix, 810
- Dysmenorrhœa, pathology and treatment of membranous, by Dr. Williams, 251; the constitutional relations of membranous, by Dr. Bordier, 283
- Dystocia produced by hydatid tumours of the pelvis, by Dr. Wiener, 839



**ECLAMPSIA**, treatment of, by Dr. Leriche, 63; puerperal, with notes of a case, by Dr. Oliver, 242; the treatment of puerperal, by Dr. Kidd, 620; case of puerperal, by Mr. Wigglesworth, 669

Edinburgh Medico-Chirurgical Society, meetings of, 48; Edinburgh Obstetrical Society, meetings of, 120, 257, 387, 473, 681, 746

Edis, Dr. A. W., the forceps in modern midwifery, 42

Engelmann, Dr., some remarks on fibrous tumours of the uterus, 691

**FEHLING**, Dr., the mechanism of development of the rachitic pelvis, 556

Finlay, Dr. W. A., case of triplets, complicated with puerperal convulsions after delivery, 263

Finucane, Mr. T. D., erysipelatos metritis, 343

Fistulæ, Dr. Bozeman's instruments for treatment of vesico-vaginal and atresia vaginæ, when complicating that condition, 114; case of vesico-urethrovaginal, the result of venereal ulceration, by Dr. Galabin, 181; mortality after operations for vesico-vaginal, by M. Vernueil, 231

Flies, Dr. Emil, treatment of ovarian tumours by electrolysis, 139

Fœtation, extra-uterine, structure of the placenta in, and intra-peritoneal migration of, the ovum, by Dr. Leopold, 137; notes of a case of, by Dr. Purefoy, 333; abdominal section for, by Dr. Hall Davis, 346; gastrotomy for, successfully performed, by Prof. Thomas, 409; case of, by Dr. Sarret, 481; structure of the placenta in, by M. de Sinéty, 483; gastrotomy for, by Dr. Heywood Smith, 553; fatal five months after term, by Dr. Guichard, 627; specimen of an, by Dr. Heywood Smith, 735; the operative treatment of abdominal, by Prof. Gusserow, 771

Fœtus, specimen of a "siren," by Dr. Matthews Duncan, 120; specimen of a "celosome," by Dr. Underhill, 120; ascites combined with distension of the bladder in a, by Dr. Galabin, 192; influence on the, of narcotics and other medicines administered to the mother, by Dr. Mundé, 206; specimen of a remarkable encephalous, by Dr. Matthews Duncan, 259; specimen of a "papyraceous fœtus," by Dr. Underhill,

387; with intra-uterine peritonitis and dilatation of bladder, uterus, and kidneys, by Dr. Ronaldson, 387; the communication of syphilis from a mother to her, by Mr. Hutchinson, 415; specimen of an acardiac, by Prof. Simpson, 473; notes of a case of anencephalous, born co-twin with a healthy child, by Prof. Simpson, 476; case of general dropsy in, with hypertrophy of the placenta, by Dr. Bassett, 675; description of an acardiac, by Prof. Simpson, 681; specimen of a, at sixth month, by Dr. Carmichael, 685; the effect of morphia administered to the mother on the, by Prof. Lusk, 700; specimen of a, born dead and doubled up, the centre of the spine presenting, by Dr. Jamieson, 746; preparation illustrative of diseased kidneys of the, by Dr. Matthews Duncan, 746; specimen of an anencephalous, born co-twin with a healthy child, and the placenta, which were separate, by Dr. Carmichael, 747

Foramen ovale, case of patent, occurring in live birth, by Dr. Cuthill, 476

Forceps in modern midwifery, by Dr. Edis, 42; "Description de deux nouveaux forceps," by Dr. Tarnier, review, 185; new craniotomy, by Dr. Roper, 249, 250; mechanical appliances for traction with midwifery, by M. Chassagny, 347; in certain breech presentations, by Dr. Agnew, 544; the effects of a frequent and early use of midwifery, upon the foetal and maternal mortality, by Dr. Galabin, 561; specimen of Dr. Tarnier's, by Dr. Wiltshire, 603; of Dr. Galabin's, 605

Fort, M. le, new operation for prolapse of the uterus, 212

Fritsch, Dr., the local treatment of puerperal fever, 61

Funis, specimens illustrating friability of the, and the so-called torsion of the cord, by Dr. Matthews Duncan, 252

**GALABIN**, Dr., case of vesico-urethro-vaginal fistula, the result of venereal ulceration, 181; ascites, combined with distension of the bladder, in a fetus, 192; specimen of uterus in the cavity, of which suppuration had occurred from occlusion of the cervix, from cancer commencing near the internal os, 324; specimen of a Zwancke's pessary, which had produced fis-

- tulæ, 538; the effect of a frequent and early use of midwifery forceps upon the fetal and maternal mortality, 561; new form of midwifery forceps, 605; the choice of the leg which should be seized in version for presentation of the upper extremity, 608
- Gastro-elytrotomy, a second successful case of, by Prof. Skene, 624
- Gellé, Dr., a new sign of respiration in the new-born child, 631
- Gervis, Dr., case of double vagina and uterus, 678
- Godson, Dr., specimen of cancer of the uterus, not affecting the os or cervix, 811
- Green, Dr. W. T., a synopsis of 1500 consecutive labours, 540
- Griffith, G. de Gorrequer, résumé of the treatment of fibroids of the uterus, particularly in their early stage, 800
- Guérin, Dr., hypertrophy of the supra-vaginal cervix, 703
- Guichard, Dr., epithelioma of the cervix cured by the injection of chloride of zinc, 213; extra-uterine foetation fatal five months after term, 627
- Gusserow, Prof., diagnosis of cysts of the broad ligament, 68; the mechanism of obliquely distorted pelvis, 557; the operative treatment of abdominal foetation, 771
- Gynæcic summaries, 65, 139, 210, 283, 349, 411, 486, 628, 700
- H**ART, Dr., gastrotomy successfully performed in a case of rupture of the uterus, 208
- Hæmatocele, peri-uterine, contrasted with pelvic cellulitis, by Dr. Graily Hewitt, 99; extra-peritoneal, escaping from pelvis through lesser sacro-sciatic notch, and causing swelling of the buttock—hæmorrhagic diathesis, by Dr. Herman, 455
- Hæmorrhage from the vaginal walls after delivery, by Dr. Budin, 282
- Hæmorrhage, death from accidental, before delivery could be effected, by Dr. Maberly, 40; treatment of post-partum, by Dr. Hyatt, 383; transfusion in post-partum, Dr. Atthill, 546; a diagnostic sign in vaginal, during parturition, by Dr. Budin, 607; case of secondary puerperal, by Mr. Redmond, 674; specimen of the uterus of a woman who had died of post-partum, by Dr. Herman, 733; the pulse-rate considered in relation to post-partum, by Dr. Thompson, 785; use of hot baths in secondary puerperal, by Dr. Bailly, 841
- Hecker, Prof., puerperal infection in new-born children, 286; acute fatty degeneration in infants, 287
- Hemiplegia, notes on a case of, in a child, following the application of the forceps at birth, by Dr. Church, 401
- Herman, Dr. G. E., abscess apparently of uterine wall, discharge through umbilicus, 452; extra-peritoneal hæmatocele, escaping from pelvis through lesser sacro-sciatic notch, and causing swelling of the buttock—hæmorrhagic diathesis, 455; specimen of a uterus into which perchloride of iron had been injected, 733
- Hermaphrodite, a married, by Prof. Dohrn, 414
- Hernia, peculiar form of vaginal, by Dr. Matthews Duncan, 265
- Hewitt, Dr. Graily, peri-uterine hæmatocele and pelvic cellulitis contrasted, 99
- Hildebrandt, Prof., abdominal drainage in ovariectomy, 142
- Hospital practice, reports of, St. Bartholomew's Hospital, 40; Guy's Hospital, 181; London Hospital, 452
- Hutchinson, Mr. Jonathan, the communication of syphilis from a mother to her foetus, 415
- Hyatt, Dr. A. Otis, treatment of post-partum hæmorrhage, 383
- Hydrorachis, specimen of a peculiar, in a foetus, by Dr. Matthews Duncan, 258
- Hymen, case of imperforate, by Dr. Bauer, 285
- I**NTESTINE, a specimen of eversion of the, through the umbilicus of an infant, by Dr. Roper, 814
- J**AMES, Mr. D. P., use of chloroform in "stammering of the uterus" during labour, 524
- Jamieson, Dr., specimen of a foetus born dead and doubled up, the centre of the spine having presented, 746
- Jenks, Dr. E. W., successful case of Cæsarian section, 628
- K**EHRER, Prof., the septic influence of lochial discharges, 559
- Keiller, Dr., specimen of an abortion at six weeks, 120

- Kennedy, Dr. H., notes on diphtheria, 128
- Kidd, Dr., specimen of phosphatic calculus from female bladder, 546; the treatment of puerperal convulsions, 620
- Kinhead, Dr. R. J., notes of a case of diphtheria, 407
- Kœberlé, Dr., gastrotomy in a case of irreducible retroversion of the uterus, 701
- Kolpokleisis, and other allied procedures as a means of treating vesico-vaginal fistulæ, by Dr. Bozeman, 170, 233, 309
- L**ABOUR, difficult case of, in a primiparous woman, who became pregnant after division of a deformed cervix uteri, by Dr. Roper, 256; note of a case of painless second stage of, in a primipara, by Dr. Underhill, 265; notes of a case of, complicated with emphysema, by Prof. Simpson, 477; the mechanism of, by Dr. Stephenson, 518, 588, 646, 777; the use of chloroform in "stammering of the uterus" during, by Mr. James, 524; a synopsis of 1500 consecutive, by Dr. Green, 540; note on two contrasted forms of weak, by Dr. Matthews Duncan, 705; case of, impeded by enlargement of the foetal kidneys, by Dr. Matthews Duncan, 753; case of, complicated by prolapse of the leg, by Dr. Matthews Duncan, 755; obstructed by carcinoma of the cervix uteri, by M. Depaul, 755
- Lawrence, Dr. A. E. Aust, notes on a case of retained menstrual discharge, 108
- Lemée, M., lithotomy in a girl nine years of age, 486
- Leopold, Dr., structure of the placenta in extra-uterine foetation, and intra-peritoneal migration of the ovum, 137; "Studies on the uterine mucous membranes during menstruation, pregnancy, and the puerperal state," review, 597
- Leriche, Dr., treatment of eclampsia, 61
- Liebman, Dr. Carlo, intra-uterine medication, 628
- Lithotomy, in a girl nine years of age, by M. Lemée, 486
- Lochial discharges, the septic influence of, by Prof. Kehrer, 559
- London Obstetrical Society, meetings of, 41, 114, 191, 249, 324, 538, 603, 674, 733, 810
- Lühe, Dr., the relation of erysipelas to puerperal fever, 410
- Lusk, Prof., the effect on the foetus of morphia administered to the mother, 700
- Lying-in Hospital, report of the University, Montreal, by Dr. MacCallum, 814
- M**ABERLY, Dr. W. H., death from accidental hæmorrhage before delivery could be effected, 40; specimens of two placentæ with abnormal arrangement of blood-vessels, 41.
- Macan, Dr. A. V., amputation of the uterus in a case of chronic inversion caused by a fibrous tumour, 611
- MacCallum, Dr., report of the University Lying-in Hospital, Montreal, 814
- Macdonald, Dr. Angus, the bearings of chronic disease of the heart upon pregnancy and parturition, 73, 145, 217, 289, 353, 417, 489; the condition of the cervix uteri in the latter months of utero-gestation, with a specimen, 268; two cases of puerperal pleuro-pneumonia, 387; the nature and mechanism of spontaneous rupture of the uterus in its cervical portion, 756
- Madden, Dr. More, specimen of oxalate of lime calculus from female bladder, 546
- Madge, Dr., notes on extra-uterine pregnancy, 678
- Mammæ, specimen of supernumerary, by Dr. Thompson, 114
- Marduel, Dr., uterine thermometry in the diagnosis of pregnancy, 484
- Maxson, Dr. E. R., cephalic version in the knee-elbow position, 623
- Medication, intra-uterine, by Dr. Liebman, 628
- Meningocele, case of complicating labour, by Dr. Poole, 678
- Menstrual discharge, notes on a case of retained, by Dr. Aust Lawrence, 108
- Menstruation after double ovariectomy associated with hæmorrhage from the pedicles, by MM. Vernueil and Terrier, 631; case of vicarious, by Dr. Young, 747
- Metritis, erysipelatos, by Mr. Finucane, 343
- Monster, report on Dr. Palfrey's specimen of a two-headed, 115
- Morphia, as a parturifacient, by Mr. Wigglesworth, 368
- Müller, Dr. P., the etiology of ante flexion, 71
- Mundé, Dr., the influence on the foetus of



narcotics and other medicines administered to the mother, 206

**N**AILS, specimen of, in a newly-born child, of unusual length, by Dr. Craig, 686

Nipples, the management of the, by Dr. Sloan, 653, 809

**O**BSTETRIC phantom, specimen of Drs. Budin and Pinard's, 606

Obstetric Medicine, the history of, in Manchester, by Dr. Priestley, 531

Obstetric summaries, 61, 137, 206, 282, 345, 409, 481, 553, 623, 700, 771, 839

Oliver, Dr. Thomas, puerperal eclampsia, 242

Olshausen, Prof., vaginal drainage in ovariectomy, 66

Ovarian cyst, rupture of an, during labour, by M. Quenu, 482; specimen of a very large, by Dr. Atthill, 610, 817

Ovarian tumours, treatment of, by electrolysis, by Dr. Semeleder, 70; by Dr. Flies, 139; difficulty in diagnosis due to rotation of, by Mr. Thornton, 720

Ovaries, accessory, by Dr. Biegel, 285

Ovariectomy, antiseptic method in, by Dr. Sims, 65; vaginal drainage in, by Prof. Olshausen, 66; abdominal drainage in, by Prof. Hildebrandt, 142; additional cases of, performed during pregnancy, by Mr. Wells, 326; menstruation after double, associated with hæmorrhage from the pedicles, by MM. Vernueil and Terrier, 631

Ovulation, case of, without menstruation, by Drs. Siredey and De Sinéty, 487

Ovum, specimen of an entire, by Dr. Craig, 268

**P**ÆDIATRIC summaries, 286, 415, 631

Palfrey, Dr., report on his specimen of a two-headed monster, 115

Paralysis, infantile, the clinical history of cases with rigid and those with flaccid muscles, by Mr. Adams, 710

Pelvic effusions, treatment of, by puncture, by Prof. Brickell, 284

Pelvis, the mechanism of development of the rachitic, by Dr. Fehling, 556; the mechanism of obliquely distorted, by Prof. Gusserow, 557

Perineum, treatment of ruptures of the, by Dr. Chambers, 34; by Dr. Ban-

tock, 94; on some of the relations of the foetal head to rupture of the, and injuries of the external genital organs, by Dr. Matthews Duncan, 120; case of complete rupture of, by Mr. Thompson, 676

Pessary, for complete procidentia uteri, by Dr. Barnes, 191; a flexible galvanic intra-uterine stem, by Dr. Barnes, 250; for simple incontinence of urine, by Prof. Schatz, 413; specimen of a Zwancke's, which had produced fistulæ, by Dr. Galabin, 538

Physiological forces, correlation of the psychological and, by Dr. Trenholme, 439

Placenta prævia, notes of a case of partial, by Dr. Young, 686

Placenta, with abnormal arrangement of blood-vessels, by Dr. Maberley, 41

Playfair, Dr., on fibroid tumours complicating delivery, 116; specimen of elephantiasis of the vulva, 326

Polypus uteri, specimens of extra and intra-uterine, by Dr. Atthill, 198; by Dr. Denham, 341; specimens of mucous, by Prof. Simpson, 478, 686; cases of, by Dr. Churchill, 618; specimen of a cellular, by Dr. Young, 746; specimen of a large fibro-myomatous, by Prof. Simpson, 748

Poole, Dr. S. W., case of meningocele complicating labour, 678

Posture, influence of, on women, by Dr. Aveling, 1, 633

"Practical Gynæcology," a handbook of the diseases of women, by Dr. Heywood Smith, review, 731

Pregnancy, the bearings of chronic disease of the heart upon, and parturition, by Dr. Angus Macdonald, 73, 145, 217, 289, 353, 417, 489; the mutual influence of traumatism and, by M. Vernueil, 345; notes of a case of extra-uterine, by Dr. Wilson, 476; uterine thermometry in the diagnosis of, by Dr. Marduel, 484; notes on extra-uterine, by Dr. Madge, 678

Priestley, Dr. W. O., an address, "The History of Obstetric Medicine in Manchester," delivered at the annual meeting of the British Medical Association, 531

Procidentia uteri, pessary for complete, by Dr. Barnes, 191

Puerperal fever, the local treatment of, by Dr. Fritsch, 61; the relation between erysipelas and, by Dr. Atthill, 209; the relation of erysipelas to, by Dr. Lühe, 410



Puerperal infection in new-born children, by Prof. Hecker, 286  
 Puerperal pleuro-pneumonia, two cases of, by Dr. Angus Macdonald, 387  
 Purefoy, Dr. R. D., notes of a case of extra-uterine foetation, 333  
 Pyrexia, a form of infantile, associated with disordered bowels, by Dr. Aikman, 447

QUENU, M., rupture of an ovarian cyst during labour, 482

REDMOND, Mr. C. S., case of secondary puerperal hæmorrhage, 674

Respiration, a new sign of, in the new-born child, by Dr. Gellé, 631

Reviews, Tarnier's "Description de deux nouveaux forceps," 185; Transactions of the American Gynæcological Society (1876), 526; Leopold's "Studies on the Uterine Mucous Membrane during Menstruation, Pregnancy, and the Puerperal State," Part I., 597; Tait's "Diseases of Women," 728; Heywood Smith's "Practical Gynæcology," 731

Revolving needle, specimen of, by Dr. Aveling, 42

Ronaldson, Dr., specimen of a foetus with intra-uterine peritonitis and dilatation of bladder, uterus, and kidneys, 387

Roper, Dr., new form of craniotomy forceps, 249, 250; a difficult case of labour in a primiparous woman, who became pregnant after division of a deformed cervix uteri, 256; specimen of a fibrous tumour which had undergone calcareous degeneration, 674; specimen of a tumour, probably an organised blood-clot, attached to the edge of an apparently healthy placenta, 674; specimen of a ruptured uterus, 733; specimen of eversion of the intestine through the umbilicus of an infant, 814

Rotunda Hospital, report of the, by Dr. Atthill, 818

SARRET, Dr., case of extra-uterine foetation, 481

Schatz, Prof., a pessary for simple incontinence of urine, 413

Schröder, Prof., adenoma of uterus, 67

Secale cornutum, on the therapeutic action of the, by Dr. Cuthill, 259

Semeleder, Dr., the treatment of ovarian tumours by electrolysis, 70

Sims, Dr. Marion, the antiseptic method in ovariectomy, 65

Simpson, Prof., specimen of an acardiac foetus, 473; of mucous polypi, 478, 686; of a large fibro-myomatous polypus, 748; notes of a case of an anencephalous foetus, born co-twin with a healthy child, 476; of a case of labour complicated with emphysema, 477; description of an acardiac foetus, 681

Sinety, M. de, the structure of the placenta in extra-uterine foetation, 483; case of ovulation without menstruation, 487

Siredey, Dr., a case of ovulation without menstruation, 487

Skene, Prof., a second successful case of gastro-elytrotomy, 624

Sloan, Dr. S., on the management of the nipples, 653, 809

Smith, Dr. Heywood, on incision of the cervix uteri, 31; gastrotomy for extra-uterine foetation, 553; "Practical Gynæcology," review, 731; specimen of extra-uterine foetation, and of carcinoma of the body of the uterus, 735

Speculum, specimens of Ferguson's, of toughened glass, by Dr. Wiltshire, 250

Squire, Dr. W., specimen of the viscera from a case in which Cæsarian section was performed, 325

Stephenson, Dr. W., the mechanism of labour, 518, 588, 646, 777

Stethoscope, note on the use of, in obstetrics, by Dr. Cumming, 473

Still-born Children, on the resuscitation of, with cases, by Dr. Bruce, 749

TAIT, Mr. Lawson, four cases of removal of large uterine myomata by abdominal section, 679; "Diseases of Women," review, 728

Tarnier, Dr., "Description de deux nouveaux forceps," review, 185; specimen of new forceps, 603, 817

Thomas, Prof., the method of enucleating fibroid tumours, 350; gastrotomy for extra-uterine foetation, successfully performed, 409

Thompson, Dr. Ashburton, specimen of supernumerary mammæ and a pedunculated growth above the sternal notch, 114; the pulse-rate considered in relation to post-partum hæmorrhage, 785

Thompson, Mr. C. R., case of complete rupture of the perineum, 676

Thornton, Mr. J. K., successful removal

- of a large fibroid uterus with both ovaries, 210; difficulty in diagnosis due to rotation of ovarian tumours, 720
- Transfusion in post-partum hæmorrhage, by Dr. Atthill, 546
- Trenholme, Dr. E. H., reply to Dr. Battey as to priority in the operation of "normal ovariectomy," 113; correlation of the psychological and physiological forces, 439
- Triples, case of, complicated with puerperal convulsions after delivery, by Dr. Finlay, 263
- Tumour, fibroid, complicating delivery, by Dr. Playfair, 116; specimen of a very large myxomatous, by Dr. Atthill, 128; specimen of a fibroid, by Dr. Wiltshire, 192; syphilitic and other, of the labia and clitoris, by Mr. Boyd, 199; the method of enucleating fibroid, by Prof. Thomas, 350; malignant of both ovaries, successfully removed, by Mr. Coates, 411; specimen of a fibrous, which had undergone calcareous degeneration, and a specimen of a probably organised blood-clot attached to the edge of an apparently healthy placenta, by Dr. Roper, 674

**UNDERHILL**, Dr., specimen of a "celosome" foetus, 120; note of a case of painless second stage of labour in a primipara, 265; specimen of a "papyraceus" foetus, 387; case of spontaneous version after the rupture of the membranes in a primipara, 478

Uterine injections, apparatus for exhibiting, after delivery, by Dr. Barnes, 191

Uterus, five cases of complete inversion of, with remarks on the operation for chronic inversion, by Dr. Matthews Duncan, 48; adenoma of, by Prof. Schröder, 67; a new mode of treating certain cases of retroflexion of the unimpregnated, by Dr. Braithwaite, 191; gastrotomy successfully performed in a case of rupture of the, by Dr. Hart, 208; successful removal of a large fibroid, with both ovaries, by Mr. Thornton, 210; new operation for prolapse of the, by M. le Fort, 212; chronic inversion of the, of thirteen years' standing, cured by pregnancy, by Dr. Le Dibarder, 215; an instrument for application of perchloride of iron to the cavity of the, by Dr. Barnes, 250; specimen of a, in the cavity of which suppuration had occurred from occlusion of the cervix from

cancer commencing near the internal os, by Dr. Galabin, 324; some cases of disease of the, in connexion with the use of alcoholic stimulants, by Mr. Doyle, 403; abscess apparently of uterine wall, discharged through the umbilicus, by Dr. Herman, 452; use of chloroform in "stammering of the," during labour, by Mr. James, 524; a hand-spray for injecting perchloride of iron into the uterus, by Dr. Atthill, 546; additional cases illustrating the changes which occur periodically in the mucous membrane of the, by Dr. Williams, 593; "Studies on the mucous membrane of the, during menstruation, pregnancy, and the puerperal state," Part I., by Dr. Leopold, review, 597; amputation of, in a case of chronic inversion caused by a fibrous tumour, by Dr. Macan, 611; case of double vagina and, by Dr. Gervis, 678; four cases of removal of large myomata from the, by abdominal section, by Mr. Tait; cases of procidentia of the, by Dr. Matthews Duncan, 687; some remarks on fibrous tumours of the, by Dr. Engelman, 691; gastrotomy in a case of irreducible retroversion of the, by Dr. Kœberlé, 701; distension of a fibroid, with serous fluid, by Dr. Worms, 702; specimen of a ruptured, by Dr. Roper, 733; specimen of a, into which perchloride of iron had been injected, by Dr. Herman, 733; specimen of carcinoma of the body of the, by Dr. Heywood Smith, 735; the nature and mechanism of spontaneous rupture of the, in its cervical portion, by Dr. Angus Macdonald, 756; résumé of the treatment of fibroids of the, particularly in their early stages, by Mr. Griffiths, 800; specimen of cancer of the body of the uterus, not affecting the cervix, by Dr. Matthews Duncan, 810; by Dr. Barnes, 811; by Dr. Godson, 811; specimen of a large tumour of the, by Dr. Chambers, 814

**VAGINA**, case of double, and uterus, by Dr. Gervis, 678

Vernueil, M., the mortality after operations for vesico-vaginal fistulæ, 213; the mutual influence of traumatism and pregnancy, 345; menstruation after double ovariectomy, associated with hæmorrhage from the pedicles, 631.

Version, case of spontaneous, after the rupture of the membranes in a primi-

para, by Dr. Underhill, 478; the choice of the leg which should be seized on, for presentations of the upper extremity, by Dr. Galabin, 608; cephalic, in the knee-elbow position, by Dr. Maxson, 623  
 Vulva, specimen of elephantiasis of the, by Dr. Playfair, 326

WELLS, Mr. Spencer, additional cases of ovariectomy performed during pregnancy, 326

West, Dr. Charles, annual address to Obstetrical Society of London, 736

Wiener, Dr. Max, cephalotribe or cranio-klast, 625; dystocia produced by hydatid tumours of the pelvis, 839

Wiglesworth, Mr. A., morphia as a parturifacient, 368; case of puerperal eclampsia, 669

Williams, Dr. John, the pathology and

treatment of membranous dysmenorrhœa, 251; additional cases illustrating the changes which occur periodically in the mucous membrane of the uterus, 593

Wilson, Dr., notes of a case of extra-uterine pregnancy, 476


Wiltshire, Dr., specimen of fibroid tumour, 192; of Ferguson's speculum of toughened glass, 250; of Dr. Tarnier's new forceps, 603

Worms, Dr., distension of a fibroid uterus with serous fluid, 702

YOUNG, Dr. James, notes of a case of partial placenta prævia, 686; specimen of a cellular polypus, 746; case of vicarious menstruation, 747; the systematic prevention of "after-pains," 747



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